DOCUMENT RESUME

ED 024 831

VT 007 618

By-Horner, James T., Comp.

Summaries of Studies in Agricultural Education, Central Region, 1967-68. An Annotated Bibliography of Studies in Agricultural Education. Departmental Report No. 5.

Nebraska Univ., Lincoln. Coll. of Agriculture and Home Economics.

Pub Date Dec 68

Note-84p.

EDRS Price MF-$0.50 HC-$4.30

Descriptors-*Abstracts, *Agricultural Education, *Annotated Bibliographies, Doctoral Theses, *Educational Research, Masters Theses, *Research Projects

The 66 studies in agricultural education completed in the American Vocational Association Central Region during 1967-68 are included in this annotated bibliography. The abstracts are organized according to the study's purpose, method, and findings. Included are masters studies, staff studies, and doctoral dissertations. The 70 studies in progress for 1968-69 are also listed. The studies reported are available for loan from university libraries, departments of agricultural education, and state departments of vocational and technical education. (DM)

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Departmental Report No. 5

SUMMARIES OF STUDIES IN AGRICULTURAL EDUCATION CENTRAL REGION 1967-68

AN ANNOTATED BIBLIOGRAPHY OF STUDIES IN AGRICULTURAL EDUCATION

The Department of Agricultural Education
College of Agriculture and Home Economics
The University of Nebraska
Lincoln, Nebraska 68503
December, 1968

VT007618

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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SUMMARIES OF STUDIES IN AGRICULTURAL EDUCATION

CENTRAL REGION

1967-68

Compiled by
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Issued by

The Department of Agricultural Education
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Lincoln, Nebraska 68503

December, 1968

INTRODUCTION

This compilation of research in agricultural education includes abstracts of 66 studies completed during 1967-68 in the 13 states of the Central Region. They are arranged alphabetically by author and indexed by subject. A list of studies in progress in 1968-69 is also included.

Abstracts of research completed in 1967-68 were reported by teacher education institutions and state departments of education in the region. All studies reported are available for loan from university libraries, departments of agricultural education in universities, and state departments of vocational and technical education.

This compilation of abstracts of research in agricultural education is an activity of the Research Committee of the Agricultural Education Division of the American Vocational Association.

James T. Horner
Central Region Representative
Research Committee
Agricultural Education Division
American Vocational Association

December, 1968

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SUMMARIES OF STUDIES, 1967-68

1. AGAN, R. J. A Coordinated and Integrated Program of Occupational Information, Selection and Preparation in a Secondary School. Staff study, 1968. Department of Vocational Education, Kansas State University, Manhattan.

Purpose. To develop and organize a coordinated and integrated program of vocational education which includes occupational information, selection and preparation in a secondary school, identifying the common and differential aspects of vocational education and the unique contributions which teachers representing the several fields of vocational education and guidance may make to an integrated vocational education program utilizing individual and team teaching techniques.

Method. A pilot program of vocational education representing all of the fields was developed, putting into effect the above objectives, measuring their contribution to a total program of vocational education. A Kansas State University research team worked with the high school staff at Paola, Kansas, a central committee of state supervisors and teacher educators from the various vocational fields in Kansas, a local advisory council, and local teacher aides to study the needs of the students and the community to initiate and operate the program and evaluate its results.

Findings. It was found that in Paola, Kansas, a complete program of vocational education could be conducted to an advantage where one vocational teacher assumed a leadership role as coordinator and enlisted the assistance of his fellow teachers as a part of the team of vocational teachers. The term "vocational teacher" did not refer to whether or not there was reimbursement from the State Board for Vocational Education. Regular vocational programs were undisturbed by the interdisciplinary approach except that duplication was taken out of the various programs through a course called "Commanalities." Students were able to explore occupations and themselves as a part of the world of work during their junior year and then select one area of work as a part-time employee during the senior year under the supervision of the team of teachers, guidance counselors, and local business people functioning as unpaid teacher aides. Evaluation teams studied the program and endorsed it as a model to other schools throughout the United States, indicating that many of the common shortcomings of vocational-technical programs had been overcome through this approach and that the program offered greater promise for solving the problems associated with adjustments of rural youth than the traditional approach to vocational education. In the Paola area students, parents, teachers, and businessmen alike joined in their approval of the interdisciplinary vocational education program as operated in the Paola, Kansas, secondary school system.

2. AMBERSON, MAX LEE. A Study of the Variables and Situational Factors Associated With High School Vocational Education Programs. Thesis, Ph.D., 1968. Library, The Ohio State University, Columbus.

Purpose. This study was intended to contribute to a clearer understanding of the variables and situational factors which relate to the availability and quality of vocational education in various sized high schools. The specific objectives were 1) to identify those variables which are important indicators of vocational education program outcomes and 2) to determine the relationship of selected qualitative factors and the availability of vocational education in various sized high schools.

Method. The researcher developed an initial list of variables from an analysis of the literature which were validated by twenty jurors and rated on an importance scale. Twenty dependent (quality) and five independent (availability) variables were selected for final study utilizing multiple regression.

A questionnaire quantifying the twenty-five variables was sent to a 50 per cent sample of the 1,705 school administrators in the states of Colorado, Idaho, Montana, North Dakota, Nevada, Oregon, South Dakota, Utah, Washington and Wyoming. Fifty-eight per cent of the questionnaires were returned.

Findings. Revealed that the twenty-five variables accounted for a reasonably high percentage (3.44 per cent) of the variability and therefore were potent indicators of the quality of vocational education programs in various sized high schools. Size of high school student body was significantly associated with 17 of the 20 dependent variables.

Secondly, the amount of special (State and/or Federal) funds received per vocational student per year by the local school district and the adequacy of vocational education facilities as rated by the local school administrator were the second and third most potent indicators in order of their significant association with the dependent (quality) variables. Administrative attitude toward vocational education was significantly related to only one of the dependent (quality) variables.

Collectively, the five independent variables included in the regression equation were significantly associated with 17 of the 20 dependent variables in the study.

3. ASHER, LARRY CHARLES. Selected Characteristics of Majors in Agricultural Education. Master's Thesis, 1968. Library, Kansas State University, Manhattan.

Purpose. To determine the significance of certain factors in causing students to enroll in agricultural education at Kansas State University and to plan to teach or not to teach.

Method. The population for this study was all students enrolled in agricultural education at Kansas State University during the spring semester of 1967. A questionnaire was administered to students in a required course of all enrollees. In addition the students doing student teaching at the time were included in the sample. Completed questionnaires were obtained from eighty-nine of the ninety-nine enrollees in agricultural education. After administering the questionnaire complete data were obtained from school records for seventy (70.6 per cent) students included in the sample.

Findings. Fifty of the students in the sample indicated they planned to teach and twenty indicated they did not plan to teach. The remaining data were analyzed in relation to the above two groups. Thirty-five of those planning to teach and seventeen of those planning not to teach had had 4-H experience. All students in the sample had had farming experience. Forty of those planning to teach and fifteen of those planning not to teach had had vocational agriculture. All of these factors were found to be not significant at the .05 level. The average high school English, science and vocational agriculture grades for those planning to teach were 2.52, 2.70 and 3.58 respectively, based upon a four point system. For those planning not to teach the grades were 2.50, 2.70 and 3.60 respectively. There were no significant differences between the two groups at the .05 level. College English and science grades for those planning to teach were both 2.02 based on a four point system. For those planning not to teach they were 1.84 and 1.60 respectively. These differences were not found to be significant at the .05 level. The overall college grade for those planning to teach was 2.34 while it was 2.10 for those planning not to teach. This difference was not statistically significant at the .05 level, but was significant in this study due to a minimum grade requirement for graduation which fell between the grades of these two groups. "Vocational agriculture teachers," "farm work," "vocational agricultural work," "FFA work" were listed as the four most important influences for enrolling in agricultural education by both groups. The order differed from the above only in that those planning not to teach ranked the "vocational agricultural teacher" second, "farm work" third, and "vocational agricultural work" first. These four factors received 70.5 per cent of the total possible responses. Concerning the group that planned to teach, the three most influential factors towards that decision were "like to stay close to production agriculture;" "teaching is a challenge;" and "want to farm on the side." "College grades," "not interested in teaching," "took agricultural education only for the training," and "salary" were the four factors most influential in the students planning not to teach. At the .04 level, significantly more of the students planning to teach indicated that a teacher should first be an "educator" rather than an "agriculturalist" than did those planning not to teach.

4. BECKER, WILLIAM JAMES. Technical Agriculture Programs in Ohio with Emphasis upon Student and Program Characteristics. Ph.D. Dissertation, 1968. Library, The Ohio State University, Columbus.

Purpose. The purpose of this study was to identify the characteristics of students in the technical agriculture programs in Ohio and to determine the association between selected student characteristics and success in the world of work.

Method. Data were secured on 246 past and current students in technical agriculture programs, including 70 graduates and 33 individuals who had failed to complete the programs. These 246 individuals represented 86 per cent of all individuals who had enrolled in these programs since their inception in 1963. Data were collected from the cumulative record files of students, by group interviews with students, and through survey instruments mailed to graduates, employees of graduates, and dropouts.

Findings. The typical enrollee in a technical agriculture program was 20.1 years old, a high school graduate with a 103.2 intelligence quotient, who had achieved a 2.25 grade point average in high school and ranked at the 46.6 percentile of his high school class.

Fifty per cent of the students lived within 50 miles of the institute attended and 48 per cent of the students commuted. Three-fourths of the students were employed while enrolled. Commuting or employment did not adversely affect the student's grade point average in the program.

A student's high school English grade point average and overall high school grade point average were the best indicators of an individual's ability to succeed in the technical agriculture program. Employers preferred graduates with farm experience, high technical school and high school grade point averages, and high intelligence quotients.

5. BEJOT, DENNIS. Analysis of the Opinions of Vocational Agriculture Instructors in Nebraska Relative to In-Service Training. 1967, Department of Agricultural Education, The University of Nebraska, Lincoln.

Purpose. The problem was to determine if in-service training is needed by the vocational agriculture instructors in Nebraska; and if needed, what would be the best way to bring this type of education to the instructors.

Method. All vocational agriculture instructors in Nebraska were sent a questionnaire. There were 115 questionnaires mailed and 96 returned or an 83 percent return.

Findings. Ninety-eight percent of the instructors indicated a need for in-service training. Fifty-three percent of the instructors are willing to travel 40 to 60 miles for in-service training, but 20 to 40 miles was preferred. Evening meetings held for two hours, between the hours of 7 and 10 p.m., were indicated as most desirable.

Fifty-six percent of the instructors indicated that college credit should be given for in-service training toward an advanced degree. Fifty-eight percent indicated that if college credits were given, it would affect the distance traveled to attend. Fifty-six percent indicated that credits would not affect their attendance. However, for credits the instructors indicated they would travel greater distances, thus increasing attendance.

Fifty-eight percent of the instructors had attended some type of in-service training during the past year. Instructors indicated that at least two weeks of in-service training per year is essential.

Data show that vocational agriculture instructors favored having the agriculture instructors determine the curriculum. The instructors indicated that a combination of the Instructional Staff at the University of Nebraska, people from industry and business, and Research Specialists should work together to instruct the training sessions.

The most desired type of class is a lecture-discussion type where all instructors can take part.

Data show the areas of training most needed were in Animal Science, Farm Mechanics, Agricultural Economics, Agronomy, Investment and Credit, and Insurance.

6. BENSON, DONAVON E. Factors Influencing the Occupational and Educational Plans and Pursuits of Nebraska Farm Boys. Thesis, M.S., 1968, Library, The University of Nebraska, Lincoln.

Purpose. (1) To describe the educational and occupational plans of farm boys, (2) to relate the theory of choice to occupational planning, (3) to relate occupational plans and actual occupations engaged in three years after high school graduation, (4) to appraise the relative importance of factors influencing educational and occupational plans, (5) to analyze the characteristics which differentiate farm boys relative to plans for agricultural careers and non-agricultural careers, and (6) to translate this information into "Hints for Guidance of Farm Boys."

Methods. Initial data for the study were obtained by group interviews of 276 farm males in the spring of 1964 in 34 Nebraska high schools. Information on occupations entered was obtained in 1967 by questionnaire, followed up by telephone.

Findings. Thirty eight percent planned to enter agricultural occupations. Two-thirds of these planned to farm. One-third planned nonagricultural careers and 28 percent were undecided.

At the time of the follow-up, less than one-half of the respondents were in full-time employment. The unemployed were seeking higher education or in the military service. More than one-fourth (26.3 percent) pursued farming and 11 percent off-farm agricultural occupations. Nearly half (46.1 percent) of the boys were in the occupations they planned as high school seniors. Fifteen percent were in related occupations. Those planning agricultural careers were more frequently in the occupations planned.

While 65 percent planned, as seniors, to seek advanced education, only 50 percent actually did so. The relative figures for seniors planning to farm were 35 and 28 percent. Of the non-farm-plan boys, 94 percent planned and 59 percent pursued additional education.

Plans for post-high school education were associated with (1) plans for nonfarm employment, (2) greater educational attainment of parents, and (3) greater financial resources of the family. Boys planning to farm more frequently desired work out of doors.

7. BENTLEY, RALPH R. and REMPEL, AVERNO M. "Changing Teacher Morale: An Experiment in Feedback of Identified Problems to Teachers and Principals." Project No. 5-0151, October 1967. U.S. Office of Education in Cooperation with Purdue University. Document Reproduction Service, 4936 Fairmont Avenue, Bethesda, Maryland 20014.

Purpose. This study was designed to answer the following questions: (1) Does feedback of teacher identified problems make a significant difference in changing teacher morale in particular school situations for (a) teachers generally, (b) vocational teachers, and (c) non-vocational teachers? (2) Do vocational teachers differ significantly from non-vocational teachers in the general level of morale and in terms of specific morale factors? (3) Is there a relationship between teacher morale and such factors as age, sex, teaching experience, level of education, salary, and major teaching assignment?

Method. A two-year pretest posttest experimental study was conducted with principals and teachers (3070) in 76 high schools in Indiana and Oregon. The Purdue Teacher Opinionnaire was used to measure the level of morale. This instrument made it possible to obtain a total score and ten meaningful sub-scores. Statistical analysis of data revealed that the adjusted mean scores for the experimental and control (all teachers) were significantly different for the total PTO scores and for six of the ten factor scores.

Findings. Contrary to expectations, all differences favored the control group. Differences for non-vocational teachers followed a pattern identical with that of the total group. For vocational teachers, significant differences were obtained for two of the ten factors and for the total score. Findings concerning the relationships of personal characteristics with morale confirmed the results of earlier studies. However, this study introduced some new dimensions since it was possible to break the total morale score into meaningful factors or sub-scores. A good illustration of this occurred with respect to sex and morale. In various studies, it was found that women have significantly higher morale than men. This study definitely established that the difference could be attributed almost entirely to two of the components affecting morale---salary and status.

8. BERGES, LYLE CHARLES. A Study of Financing Future Farmers of America Chapters in North Central Kansas. Master's Report, 1968. Library, Kansas State University, Manhattan.

Purpose. To find what fund raising activities were used by the FFA chapters in the North Central Kansas District.

The study also determined what activities were considered successful by the instructors and what activities were considered unsuccessful by the instructors.

Method. Data for the study were collected by questionnaires which were sent to all vocational agriculture instructors in the North Central Kansas District. Twenty-five of the twenty-seven instructors responded to the questionnaire.

Findings. The FFA chapters in the North Central Kansas District had an average income during the 1966-67 school year of $896.89. The average expense per chapter was $816.35. The vocational agriculture instructors in the North Central Kansas District had taught an average of 8.1 years with an average of 5.1 years in the same school. Each instructor had an average of thirty-six boys in his FFA chapter. The mean income per FFA member in the district was $24.51 and the mean expense per member was $22.30. The size of the FFA chapter had little effect on the mean income per member. The larger chapters earned an average of $2.75 more per member than did the smaller chapters. The teachers number of years of teaching in the community seemed to the writer to have some effect on chapter income. The teachers in the chapters with above average income had taught in the present school 1.8 times longer than those instructors with the below average income chapters. The money raising activities that were the most often used were dues, shop projects, selling calendars, prize money from livestock and machinery shows, selling safety materials, and agricultural related items, renting chapter equipment, and operating concession stands. The unsuccessful activities reported were selling, raffle, gilt ring, test plot, blue rock shoot, and donations. The freshman class was the most willing to work, followed by the sophomore, junior, and senior classes, respectively. Fifty-six percent of the chapters had no restrictions placed on their money raising activities while the remaining forty-four percent had a restriction of some sort placed on their activities either by the school board or the administration. Conclusions of the study indicated that the first step in planning the financing of a FFA chapter is to develop a program of work from which an expense budget can be made. After the expense budget has been developed the chapter can plan the activities for raising money. More money than needed should be raised in case some activity does not reach its goal or some unexpected expenses arise. It was concluded also that the money raising activity should be accepted by the community, have educational value, be in harmony with other individuals or groups, and preferably be agriculturally related. The money raising activity should allow all of the members to participate and should not be in conflict with school policies.

9. BJORAKER, WALTER T. and SLEDGE, GEORGE W. Educational and Occupational Adjustment of Wisconsin Male Youth. Staff study, Department of Agricultural and Extension Education. Research Bulletin 586, January, 1968. University of Wisconsin, Madison.

Purpose. In 1956 the original objective of the study (Project 985) was to determine opportunities existing in farming and current methods of getting established in farming. Many related factors were found to affect youths' decision-making in choosing any occupation. The scope of Project 985 broadened. Project 985 was not designed around one theory of student decision-making, rather it explores many factors, such as family background, individual ability, and school performance, associated with certain choices.

Method. The population for this project was defined as all male high school seniors in 5 Wisconsin counties. The counties were selected on the basis of the following criteria: (1) Geographical distribution (2) Varied types of farming, size of farm and farm value (3) Agriculture education programs in operation (4) Number of schools (5) Cooperation from personnel in counties (6) Heterogeneous and homogeneous population (7) Low, medium, and high farm income. In the 5 selected nonmetropolitan counties (Adams, Iowa, Manitowoc, Polk, and Price) a total of 31 high schools cooperated with the study. Data were collected from two different groups of participating students in Project 985. The initial group of 764 graduating seniors first completed questionnaires in the spring of 1956. In the fall of 1957, a second group of 1,107 male matriculating freshmen in these same schools participated in the project, and data were first collected from them during 1957-58. Those students who graduated from high school in the spring of 1956 will be referred to as the "G" group. The "M" group are those students who were matriculating high school freshmen in the fall of 1957. During the 7-year period since this study was begun, intermittent questionnaire contacts have been made with all or part of this sample population in order to collect information. A longitudinal approach was taken of the nature of student decision-making. The studies in Project 985 do not depend on recall by study participants; the effect of time, of economic changes, and other factors can be studied as they occur.

Findings. 1. Not all students perceived that they had received personal and vocational guidance. Those who did perceive that they received this help in their decision-making felt parents were the chief source of help with literature and aptitude testing second in importance, followed by the teachers in the high school. Of the teachers, the vo-ag teacher was listed as being by far the most important.

2. Twice as many non-farm youth as farm youth made plans to attend college. Of those who went on to college, the state universities nearest them received the highest percentage of the graduates with the University of Wisconsin receiving the second largest number. Private colleges received the highest number of students who enrolled out of state. 3. Of all the factors for predicting success in college, high school achievement was the best predictor. 4. As a major field of study at the college level, agriculture attracted a disproportionately greater percentage of youth who had not planned for college one year earlier. 5. The difference between the farm and non-farm youth who planned for college and actually attended did not carry over to college achievement, in that 20% of both groups earned the Bachelor's degree. 6. The method of financial support for college had little influence on their persistence of attendance, but the type of college was related to the dropout rate. The state colleges received the greatest percentage of the enrollees and also had the greatest dropout rate. This suggests that the motivation to attend college may have been influenced by the nearness of the college rather than a high motivation for a college degree. 7. Farm reared youth were found in greater percentage than non-farm youth in farming and craftsmen-operative categories of occupation. 8. The decision to enter farming as a career was based on the youth's having an intense interest and motivation toward making farming an occupation. Also his parents must have the ability to aid materially in providing an opportunity for him to begin farming. Some youth became farmers when they lacked interest in other occupations and their parents offered material aids such as shares of the farm. Almost without exception youth indicated that the opportunity to start farming relied heavily on the amount of economic and psychological encouragement provided by their parents. 9. Youth planning to farm usually made their plans early and less often included college as a part of their plans. 10. The majority of those choosing farming had lower than average scores on the Henman-Nelson Test of Mental Ability. 11. Few youth who were seniors planned to farm actually attained their goal to become established in farming. Fifty percent of the "G" group who planned to farm were so employed and only 30% of the "M" group realized their plans to become farmers. 12. Many youth who 20 years ago would have considered only farming as an occupation now have become interested in non-farm agribusiness occupations.

10. BORCHER, SIDNEY D. Year of High School Graduation Related to the Occupational Factors of Nebraska Farm Male High School Graduates. Thesis, M.S., 1967. Library, The University of Nebraska, Lincoln.

Purpose. To analyze, on a state-wide basis, the relationship of year of graduation to factors associated with the occupations of Nebraska male farm high school graduates who were graduated from high school nine to thirteen years earlier.

Method. Lists of all Nebraska high schools which had offered approved programs of vocational agriculture during at least one of the academic years 1954 through 1958 were developed grouped according to size of high school. Size was based on high school boy enrollment. A proportionate sample of 50 percent or 69 of these schools was randomly selected. A list of 3192 farm reared males who graduated between 1954 and 1958 obtained from the 69 schools, and a 40 percent sample was randomly selected. Questionnaires were received from 1120 graduates, or 92.9 percent.

Findings. (1) A higher percentage, 40.0 percent, of the 1958 graduates had entered farming than graduates of the other years studied; (2) the highest percent of graduates employed in off-farm agricultural occupations were 1958 graduates; (3) fewer of the 1958 graduates had migrated from their home communities than for other years studied; (4) occupational income was directly related to year of graduation, as number of years since graduation increased, graduates occupational income also increased; (5) as year of graduation became more recent, the percentage of fathers who were owners and owner-renters increased; (6) the extent of need of knowledge as expressed by graduates remained constant over the five year period studied; (7) as the number of years since high school graduation increased, the job satisfaction scores expressed by graduates also increased; (8) enrollment in vocational agriculture was found to be correlated with job satisfaction score.

11. CARTER, CECIL E., JR. The Relation of Leader Behavior Dimensions and Group Characteristics to County Extension Advisory Committee Performances. Dissertation, Ph.D., 1967. Library, The Ohio State University.

Purpose. The purposes of this study were (a) to identify the leadership behavior dimensions of County Extension Agent, Chairmen which were related to the effective performance of County Extension Advisory Committees, and (b) to identify the group characteristics of County Extension Advisory Committees which were related to the effective performance of the Advisory Committees.

Method. Data were secured from a stratified random sample of 209 County Extension Advisory Committee members located in 29 Counties of Ohio. The Leader Behavior Description Questionnaire and the Group Dimensions Description

Questionnaire were completed by the Advisory Committee members. Rating-ranking scales were used to obtain evaluations by the District Supervisors concerning the effectiveness of the Advisory Committees in the performance of the functions of program development, program support, and Committee maintenance.

Findings. 1. The performance of County Extension Advisory Committees was more effective when the County Agent, Chairmen were perceived to provide initiation of structure leadership behavior for the Advisory Committees. 2. The effective performance of County Extension Advisory Committees was not associated with the consideration leadership behavior of the County Agent, Chairman. 3. The performance of County Extension Advisory Committees was more effective when the duties, obligations, privileges, and power or influence of the Committee Members were distributed among the members. 4. The performance of County Extension Advisory Committees was more effective when the members differed in the personal characteristics of age, sex, race, socio-economic status, and interests and attitudes. 5. Effective performance of the County Extension Advisory Committees depended partly upon the functions performed by the Committees. 6. The less structured and more heterogeneous Advisory Committees were more effective in their performance on the functions of program development and public support, but these group characteristics did not lead to the effective performance of the Advisory Committees on the functions of Committee maintenance.

12. CHRISTENSEN, VIRGIL W. Competencies in Animal Nutrition Needed by Farmers. Thesis, M.S., 1968. Library, Iowa State University, Ames.

Purpose. The purpose of this study was to investigate the status of animal nutrition competencies among farmers. The specific objectives of the study were: (1) to determine the animal nutrition competencies needed by farmers; (2) to determine the degree these competencies were needed and possessed; (3) to determine the relationship of years of farming, size of farm, size of livestock production enterprise, and major type of farming program to the evaluation of the degree of competence needed and possessed; and (4) to plan for education needs of present and prospective farmers.

Method. The competencies were determined utilizing a panel of consultants consisting of animal science teaching staff at Iowa State University, commercial feed manufacturing representatives, vocational agriculture instructors, and progressive livestock producers. Questionnaires were mailed to a random sample of Iowa farmers and to farmers selected by Iowa vocational agriculture instructors as being efficient livestock feeders to obtain the degree of competence needed and possessed in each competency and other information. Usable questionnaires were received from 118 random and 125 selected farmers.

Findings. A total of 48 competencies were determined by the panel, 24 being understandings and 23 abilities. Competencies ranked highest by both selected and random sample farmers for degree of competence needed were for understandings of (1) how ration imbalance can affect nutrient utilization, and (2) purpose and use of antibiotics.

Abilities ranked highest by both groups for degree of competence needed were the abilities to (1) formulate a ration relative to basic nutritional requirements, (2) recognize the importance of good management, disease, and parasite control and their relation to nutrition, (3) evaluate the best methods of using the feeds available to you, (4) predict when meat animals have reached their most desirable carcass potential, and (5) obtain or raise animals that will utilize feeds most efficiently.

Comparisons among farmers classified by various characteristics resulted in the following groups having largest differences between overall mean scores for degree of competence needed and possessed: (1) operators of large acreages, (2) farmers with the least farming experience, (3) farmers enrolled in adult farmer classes, (4) farmers with no vocational agriculture training, (5) general (crop and livestock income equal) farmers, (6) farmers with four years of vocational agriculture training, and (7) farmers with the least education.

13. CROSS, IRVING C. Scholastic Achievement of Colorado Vocational Agriculture Students Enrolled at Colorado State University From 1950 to 1960. Dissertation, Ph.D, 1967. Library, The Ohio State University, Columbus.

Purpose. To investigate the influence of high school vocational agriculture training upon the scholastic achievement of Colorado students enrolled as freshmen at Colorado State University from 1950 to 1960.

Method. The data were obtained from the official records in the Colorado State University Registrar's Office and from mailed questionnaires received from 800 male Colorado high school graduates, 450 with high school vocational agriculture training and 350 without such training. The t-test was used to test the significance of the difference existing between the two segments of the population.

Findings. The results of the t-test at the .05 level of confidence indicated no significant difference between the twelfth quarter mean cumulative point-hour ratios of the two groups of students. The students without vocational agriculture achieved a 2.49 ratio as compared to 2.52 for those with vocational agriculture. No significant difference was found in twelfth quarter ratios between those students with four years and those with two years of vocational agriculture. No significant difference was found between the mean grade points of students with and without vocational agriculture in 13 selected courses, but in the Introductory Animal Science course the difference favoring the students with vocational agriculture was statistically significant.

Students with vocational agriculture were more persistent in each of the five colleges. Fifty-eight percent of the students with vocational agriculture were graduated or still in school after twelve quarters of enrollment contrasted with 46 percent of those without vocational agriculture.

There was little difference in the number of years of high school English completed by students with and without vocational agriculture but students without vocational agriculture completed slightly more mathematics and science in high school.

A much higher percentage of students with vocational agriculture than students without such training came from the smaller high school graduating classes.

14. DEUNK, LEON. Factors Related to the Occupations of the Norris High School Male Farm Graduates. Thesis, M.S., 1968. Library, The University of Nebraska, Lincoln.

Purpose. To determine the occupational status of all farm reared male high school graduates from five high schools, 1947 through 1966, that combined to form the new George Norris High School District.

Method. Questionnaires were mailed to 259 graduates, and responses received from 217 or 83.7 percent of the male graduates from the five high schools during the twenty year period 1947 through 1966.

Findings. (1) Employment status of graduates was 25 percent farmers, 15.7 percent in off-farm agricultural occupations, and 57.8 percent in nonagricultural occupations; (2) shortage of capital and unavailability of farms were the two major reasons given by graduates who had not entered farming; (3) over one-third of the graduates had only one position since high school graduation; (4) over one-half of the graduates were employed in an occupation having a relatively high prestige value according to the North-Hatt Occupational Prestige Scale; (5) over 85 percent of the graduates had migrated 300 miles or less; (6) income and need for agricultural knowledge were highly correlated; (7) one-fourth of the graduates who enrolled in post-high school institutions had majored in an agricultural curriculum; (8) 50 percent of the graduates had incomes over $7,000 per year, and one-third of the over $7,001 group were engaged in farming.

15. DILLON, ROY D. and HORNER, JAMES T. Occupational Commonalities -- A Base for Course Construction. Staff Study, 1968. Department of Agricultural Education, The University of Nebraska, Lincoln.

Purpose. To conduct a state-wide inventory of the various kinds of employment, and to analyze the responses of workers regarding the knowledge and skills used in the performance of their jobs. Finally, how could the types of employment be categorized by common competency groups?

Method. An interview-questionnaire procedure was used to obtain information from a stratified random sample of 1500 employed persons between ages 21 and 69. The sample was drawn from personal property tax rolls in 14 index counties in Nebraska. Each of the 14 counties was identified by Knox, as "most representative" of a group of similar counties, based upon his study of the sociological characteristics of the adult population.

Each employed worker in the sample was asked to respond to a checklist of 144 activities, duties, and knowledges.

Findings. Three hundred eighty-four different job titles were defined for the 1315 respondents, using the Dictionary of Occupational Titles, Third Edition, 1965. When placed in a major occupational group, based upon their major job requirements, 33.5 percent were in agricultural jobs on and off-the-farm, 22.4 percent in professional and managerial jobs, 15.6 percent were in clerical and sales, 13.8 percent were in services, and 3.3 percent in unskilled jobs. A total of 826 or 62.9 percent of the workers said they required a high school diploma or higher for their jobs, and 70.1 percent of the respondents indicated their job requirements included prior work experience, on-the-job training, or a combination of the two.

Most important from the study were the findings concerning activities and knowledges needed by workers. Of the

144 activities and knowledge areas on the checklist, eleven were checked as used by more than 50 percent of the respondents. The two areas of knowledge checked were Bookkeeping and Handling Money. The nine activities and duties checked were Buying, Decision Making, Meeting Farm People, Meeting Non-Farm People, Operating with Tools Equipment and Business Machines, Repairing, Keeping Records and Accounts, Maintenance and Handling Money. These results can be translated into major components of a priority course(s) in a total vocational education program. There were five items checked by more than 40 percent of the workers, and twenty-seven items checked by 33 percent or more of the workers. These groups of activities and areas of knowledge are viewed as common components and as a base for vocational course construction.

This research strongly supports the planning of broad vocational courses that stress basic concepts, in which persons in many different job titles, but with common educational needs, may be prepared together.

16. DITMER, WAYNE W. A Study of Job and Educational Experiences of Vocational Agriculture Graduates in the Year 1957 From Selected North Dakota High Schools. M.S., Research Paper, 1968. Department of Agricultural Education. North Dakota State University, Fargo.

Purpose. To determine the job and educational experiences of vocational agriculture graduates of selected North Dakota high schools for the year 1957 including

1. Their job or educational status as of October, 1957.
2. Their present job status.
3. The highest level of their formal educational experience.
4. The number of different types of jobs they had held.
5. Their present geographic location.

Method. Twenty-five North Dakota high schools which had offered vocational agriculture continuously since 1953-1954 were selected for the study. A mailing list of 1957 graduates who had completed three or more years of vocational agriculture was completed. The findings in the study are based upon 94 questionnaires. This represented 68.1 percent of the 138 graduates in vocational agriculture from 20 schools.

Findings. In October, 1957, forty-nine or 52.1 percent were in agricultural occupations; 43 in production agriculture and six in agri-business. Twenty-eight or 29.8 percent were students, 11 were in the armed services and six were employed in non-agricultural jobs.

At the close of the study in 1968, forty-eight or 51.1 percent were in agricultural occupations; 34 in production agriculture; 11 in agri-business and three in the field of professional agriculture. Forty or 42.5 percent were in non agricultural employment, one was a student and five were in the armed services.

Seventeen or 18.1 percent had college education in agriculture. Twenty-three or 24.5 percent had college educational work in non-agricultural fields. Twenty-one or 22.3 percent had vocational and/or technical school education and 33 or 35.1 percent had no formal education beyond high school. Twenty-seven of those studies had earned college degrees.

There was a high degree of job stability with 78 or 83.0 percent having held three or fewer jobs during the 10 year period since graduation from high school. Twenty-six or 27.7 percent had held only one type of job.

Sixty-five or 69.2 percent of those studied lived in North Dakota with 56 living in the community in which they graduated from high school. Twenty-nine had left the state for various reasons.

17. DOUBLER, GERALD. History of Adult Evening School in Vocational Agriculture in Iowa. Thesis, M.S., 1968. Library, Iowa State University, Ames.

Purpose. The purposes of this study were to ascertain the historical development of agricultural education directed to adult farmers, to identify some of the factors which have made the program what it is today, and to discover implications for the improvement of adult school programs for farmers in Iowa.

Method. Information was collected from the following sources: (1) annual reports from the United States Office of Education, (2) records of the State Department of Public Instruction, (3) books, pamphlets and unpublished theses from the Iowa State University Library, (4) articles, bulletins, non-thesis studies, etc. written on the subject of adult evening school classes in vocational agriculture, (5) discussions with educators and the faculty members in the Department of Education, Iowa State University.

Findings. The adult evening school programs in vocational agriculture started in 1923. There was a single reimbursed class with an enrollment of 22.

During the 1932 to 1939 period, the popularity of the adult program in vocational agriculture greatly increased.

By the end of the period, 89 departments were conducting 91 classes and reaching a total of 6221 farmers.

Starting with 76 departments conducting 77 classes in 1932, the period ended with 146 classes in 144 departments. Enrollment had nearly doubled increasing from 5,708 to 10,526 at the end of the period.

The scope of the program decreased during the war with only 102 departments offering classes in 1944-45. At the start of the decade, 174 departments had offered 175 classes. The program gained after the war ending the period with 187 classes in 180 schools.

The enrollment picture followed the same pattern. Only 5502 farmers were reached in 1944, whereas at the start of the decade 11,245 farmers were enrolled; 14,497 were being reached in 1949. More people had attended adult evening programs during the period than the enrollment of high school students in the vocational agriculture program.

The number of programs offered in the state reached a peak during the 1957-58 school year with 319 classes offered in 294 departments. Enrollment followed the same trend with 16,812 farmers reached during 1954-55. The number attending declined during the latter part of the decade.

The number of schools offering classes for adult farmers continued to drop from 264 in 1960 to 228 departments in 1967. Total classes offered declined from 296 to 238. Farmers enrolled though increased during this period from 13,241 to 16,305 in the end; 16,904 were reached during the 1965-66 school year.

The need for adult education in vocational agriculture will continue to increase in future years. Food production and processing will develop with technological advances and there will be increased need for instruction in these areas. Farm size will increase and the number in ag-related occupations will become greater. The challenges that agriculture will meet will require sound educational programs for adults employed in this field.

18. ELSON, DONALD EUGENE. Operational Procedures for Multiple-Teacher Departments of Vocational Agriculture. Master's Thesis, 1968. Library, Kansas State University, Manhattan.

Purpose. (1) to compare the opinions of teachers and administrators with experience in multiple-teacher departments of vocational agriculture in Kansas, the state supervisor of Agricultural Education in each state, and the head teacher educator of Agricultural Education in each college or university preparing vocational agriculture teachers concerning the organizational and operational procedures of multiple-teacher departments of vocational agriculture and (2) to make recommendations based upon this study for the development of guidelines for establishment and/or operation of multiple-teacher departments in Kansas.

Method. The data for this study were obtained by a mailed opinionnaire. The sample consisted of forty-one teachers, twenty-one administrators, forty-nine supervisors, and seventy-six teacher educators. Eighty-two percent of the sample responded. Statistical treatment of the data included frequency, percent, and chi-square analysis.

Findings. The following conclusions were established from the findings of the study. (1) An additional teacher could be justified because of a high demand for young and/or adult farmer classes. (2) A high demand for specialized training of high school students could justify an additional teacher. (3) Teachers, administrators, and state supervisory personnel should all have a direct role in the development of policies for the multiple-teacher department. (4) Assignment of teaching duties should be made through cooperation of all teachers and the administrator and should be in writing. A definite assignment should be made concerning reports. (5) Students should be grouped according to year in school and taught by teachers specializing in particular areas. (6) Supervisory visits should be made by the teacher with a specialization which corresponds to the student's needs. At least one hour should be scheduled during each school day for visitation. (7) A multiple-teacher department should not have more than one F.F.A. chapter and all duties of the advisor should not be assigned to one teacher. The training of teams should be the responsibility of the teacher with an interest in the particular area. (8) Advisory councils are necessary for effective operation of multiple-teacher departments. (9) Each teacher in a department should have separate classrooms, but one shop would be sufficient with one teacher responsible for stocking the shop supplies. Scheduling use of facilities and/or equipment should be a shared responsibility of the teachers in the department. (10) One teacher should be selected as head teacher by the administrator with the approval of the teachers in the department. The head teachers should have the authority to make decisions within the policies of the school and should receive compensation for those added responsibilities in monetary form or by reducing his teaching load.

19. ELSTROM, ALLAN CHARLES. A Weed Control Source Unit. Master's Report, 1968. Library, Kansas State University, Manhattan.

Purpose. To evaluate source material and to develop a weed control source unit for agronomic crops in prepared lesson plans that might be used by vocational agricultural teachers in preparing and teaching lessons on weed control.

Method. (1) Names of weeds that were very harmful in agronomic crops were obtained. (2) Information for developing this source unit was obtained from technical publications, text books, magazines, and by interviews. (3) The above material and interviews were reviewed. Selections from the material and interviews were made on their potential usefulness in helping Kansas vocational agricultural teachers teach lessons on weed control. (4) A tentative source unit was developed. (5) The tentative source unit was submitted to an advisory committee of two specialists. One reviewed the source unit from the standpoint of its organization and its value in meeting the needs of vocational agricultural teachers and one reviewed the source unit from the standpoint of its technical information. (6) The source unit was then revised on the basis of suggestions made by the advisory committee. (7) A tentative multiple choice 100 question examination, based on the material in the source unit, was developed. This examination was reviewed by three specialists. No major revisions were made from the tentative examination.

Findings. The usefulness of the material in the source unit was evaluated by a comparison of pre-test and post-test scores taken in connection with the teaching of lessons from the unit to Jewell High School vocational agricultural students. These students were divided into two groups. The freshmen and seniors were the control group and the sophomores and juniors were the experimental group. The pre-test was given to all the students. The source unit was taught to the experimental group and then all the students took the test again. The results of the pre-test and the post-test were analyzed. The findings showed that those students who received instruction from the source unit increased their scores from the pre-test to the post-test by 90.90 percent. Those students not having any instruction from the source unit increased their scores 2.10 percent. There was a total difference of 88.80 percent between the experimental group and the control group.

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20. GILLESPIE, JAMES R. Competencies in Agriculture Needed by Males Employed in Dairy Food Processing. Thesis, M.S., 1968. Library, Iowa State University, Ames.

Purpose. (1) To identify the competencies needed by employees in dairy processing plants in Iowa; (2) to identify job opportunities and growth potential in terms of job openings; (3) to evaluate the degree that managers and employees needed and possessed the specific competencies; and (4) to determine the nonagricultural competencies needed by persons employed in dairy processing plants.

Method. A panel of consultants was used to select the 39 agricultural competencies to be used in the questionnaire. Useable replies were received from 50 plant managers and 42 plant employees.

Managers and employees were asked to evaluate the 39 competencies on a 5 point scale in terms of degree of competence needed and possessed in each competency. Analysis was made on the basis of mean scores for degree of competence needed and possessed by managers and employees.

Findings. Managers indicated the ten most important competencies needed by themselves were the ability to: (1) judge dairy products and test for butterfat and solids-not-fat; (2) promote sale of dairy products; (3) describe procedures, tests and processes used in plants to farmers; understanding of (4) effect of antibiotics on milk; (5) cleaning and sanitizing chemicals; (6) the influence and effect of bacteria on milk and diary products; (7) sanitation requirements on dairy farm and in dairy plant; (8) classes of milk; (9) marketing farm products; and (10) competition of substitutes for dairy products.

The ten most important competencies for employees as evaluated by themselves were: ability to (1) make line checks for bacteria contamination in equipment; (2) promote sale of dairy products; understanding of (3) effect of antibiotics on milk; (4) grade A requirements for milk production; (5) manufacturing grade requirements for milk production; (6) cleaning and sanitizing chemicals; (7) the influence and effect of bacteria on milk and dairy products; (8) sanitation requirements on dairy farm and in dairy plant; (9) classes of milk; and (10) factors effecting butterfat and solids-not-fat tests in cows.

The managers rated the most important competencies needed by employees to be the ability to (1) use chemicals for cleaning which are water compatible in area; (2) make line checks for bacteria contamination in equipment; understanding of (3) the influence and effect of bacteria on milk and dairy products; and (4) sanitation requirements on dairy farm and in dairy plant.

Both managers and employees with farm experience possesed greater competence in the competencies than did those without farm experience.

The identification of the most important competencies has implications for training programs designed to meet the needs of persons employed in dairy processing plants.

Farm experience and vocational agriculture can provide a firm background in many of the competencies. Training may need to be provided at the high school level, in area vocational-technical schools and at the university level.

21. GROVES, ROBERT HARRY. A Study of Saddle Horse and Other Livestock Advisors' Perceptions of 4-H Club Work in Ohio. Thesis, M.S., 1967. Library, Ohio State University, Columbus.

Purpose. The study was designed to (1) identify differences in selected characteristics of saddle horse advisors as compared with other livestock advisors; (2) determine and compare their perceptions of the ten national 4-H objectives; (3) measure and compare their level of understanding of the 4-H program; (4) identify and compare the degree of consensus between saddle horse and other livestock advisors' perceptions of assistance received from County and State Extension staffs, and (5) measure and compare their level of role satisfactions.

Method. The study was conducted in 30 of 88 Ohio counties with a population of 214 saddle horse and 331 other livestock advisors. Questionnaires were mailed to a 50 per cent sample. Data were based on 90 saddle horse and 133 other livestock questionnaires. State 4-H staff members and district supervisors assisted in developing the four part questionnaire. Information from questionnaires was coded and sorted on data processing cards. Chi-square, Spearman's rho and standard deviation statistical treatments were used.

Findings. Saddle horse and other livestock 4-H advisors differed significantly in personal characteristics such as; tenure as advisor, sex, former experience as 4-H members, acquaintance with Extension before serving as advisor, and occupational status. There was no significant difference in formal education completed, size of 4-H club, and level of family income.

There was high agreement between saddle horse and other livestock advisors on (1) the importance of the national 4-H objectives, (2) attitudes regarding 4-H philosophy and measuring member growth, (3) project assistance received and needed, and (4) role satisfaction. There was considerable disagreement on attitudes regarding 4-H club organization, club activities, project work, and leader development.

Both groups of advisors differed with State staff-supervisors on 11 of 36 statements regarding the 4-H program.

22. HANNEMANN, JAMES WILLIAM. The Effect of Auditory and Visual Motion Picture Descriptive Modalites in Teaching Perceptual-Motor Skills Used in the Grading of Cereal Grains. Thesis, Ph.D., 1968. Library, Michigan State University, East Lansing.

Purpose. This study was designed to answer the following problem: "When using motion pictures to demonstrate perceptual-motor skills, do students learn to imitate the skills demonstrated more accurately when the supportive descriptive terminology is presented auditorily or when the supportive descriptive terminology is presented visually?"

Method. The perceptual-motor skills necessary to determine the test weight per bushel of cereal grains were identified. Using this information, a measuring instrument and a 16mm motion picture were developed. One modality of the motion picture had the descriptive terminology in visual (caption) form and the second modality had the descriptive terminology in auditory (spoken) form.

Using a population of 87 males enrolled in the Institute of Agricultural Technology, College of Agriculture and Natural Resources, Michigan State University, 60 students were selected by simple, nonreplacement random sampling. From these 60 students, 30 students were randomly assigned to the control group and 30 students randomly assigned to the experimental group.

Post-test-Only-Control-Group experimental design was selected as the experimental design and one-way analysis of variance was used to determine the difference between the mean scores of the control and experimental group.

Findings. (1) The visual descriptive supporting modality was more effective than the auditory descriptive supporting modality for identification of the parts of the apparatus used in determining the test weight per bushel; (2) The visual and auditory descriptive supporting modalities were equally effective in teaching students to imitate perceptual-motor skills demonstrated by the motion picture.

23. HARPER, JOSEPH. Competencies in Swine Production Needed by Farmers. Thesis, M.S., 1968. Library, Iowa State University, Ames.

Purpose. The purposes of this study were: (1) to determine the competencies in swine production needed by farmers; (2) to determine the degree of competence needed and possessed by swine producers; (3) to determine the relationships among selected variable factors and the degrees of competence needed and possessed; and (4) to determine the implications for future planning of educational needs for swine producers.

Method. In this study a panel of outstanding swine specialists assisted in developing a list of 50 competencies needed for success in swine production. The panel included nine commercial swine producers and one purebred breeder, plus six nonproducers. The nonproducers were representatives of the Iowa Swine Producers Association, the meat packing industry, hybrid hog production, high school agriculture teachers, university teaching staff, and the agriculture extension service. The list of competencies was included in a questionnaire which was sent to 183 master swine producers and 696 random sample farmers.

Useable responses were received from 130 master swine producers and 102 random sample farmers.

Findings. Eighteen of the 50 competencies selected by the panel of specialists were understandings and 32 were abilities. Degree of competence needed mean scores of 3.0 or higher (much competence needed) were indicated by both master swine producer and random sample respondents for the understandings of (1) the factors that contribute the high quality pork demanded by the consumer; (2) the possibilities for genetic improvement of desirable traits; (3) the affect of performance traits on production costs; (4) the affect of the ration, condition, exercise, and other factors on litter size; (5) the function of, and requirements for feed nutrients; (6) the importance of fresh clean water; and (7) the affect of stress and how it can be minimized.

Abilities needed with highest competence needed mean scores for both master swine producer and random sample respondents were: (1) to make timely decisions in swine management; (2) to provide adequate swine housing and ventilation; (3) to evaluate carcass and other production testing information in the selection of breeding stock; (4) to appraise the sow herd and select boars to improve observed weaknesses; (5) to formulate rations for various stages of swine production; (6) to feed at correct levels and at the right time, chemicals, antibiotics, and drugs; and (7) to develop and use an effective sanitation and health program.

It was observed that master swine producers were slightly older farmers, with higher educational attainment, had more vocational agriculture, marketed more hogs, tended to be owners of land, and operated more acres of land than random sample farmers.

The 50 competencies in this study have importance in planning educational programs for swine producers. They should form the basis for planning instruction and in-service training for high school vocational agriculture classes, young and adult farmer classes, cooperative agriculture extension service programs, area vocational schools, and the Land Grant Colleges or Universities.

24. HINSON, DAVID HARRY. An Analysis of Soil Conservation Information as Used in Wayne County, Ohio. Thesis, M.A., 1967. Library, The Ohio State University, Columbus.

Purpose. The specific objectives of this study were (1) to determine the relationship, if any, that existed between the amount and types of information received by cooperators and the progress they had made toward applying their Conservation Farm Plans; (2) to evaluate the usefulness of the Conservation Farm Plan to cooperators as an informational tool; and (3) to determine opinions of cooperators concerning various methods of diffusing conservation information.

Method. The population studied was composed of Wayne Soil and Water Conservation District cooperators who had received Basic Conservation Farm Plans within the past five years and owned and/or operated farms of fifty acres or more. Three hundred four cooperators fell under this classification and were placed on a master list by townships and in order of dates Plans were received. Fifty cooperators were chosen by random sample and personally interviewed by the writer.

The effectiveness of the conservation information received by cooperators was tested by comparing the responses and characteristics of those farmers who applied a high percentage of the conservation practices listed in their Farm Plan termed Excellent cooperators with those who applied a lower percentage (termed Good and Fair cooperators).

Findings. The following conclusions were made as a result of the information gathered in this study. (1) Cooperators tended to be well satisfied with Soil Conservation Service technical assistance and information. (2) Excellent cooperators were more receptive to conservation information and made more effective use of it than the good and fair conservation achievement groups. (3) Most cooperators found the Conservation Farm Plan to be a very useful informational tool. More excellent cooperators found it very useful than the others. (4) Excellent cooperators were more cosmopolite than the other two groups in seeking conservation information. (5) Conservation information could be considered effective in the sense that it influenced a majority of the cooperators to apply more or much more conservation than they anticipated.

25. HORNER, JAMES T., DILLON, ROY D., AND CROMER, C.A. A State-Wide Computerized Model to Determine Occupational Opportunities in Nebraska. Staff Study, 1968. Nebraska Research Coordinating Unit for Vocational Education, The University of Nebraska, Lincoln.

Purpose. To determine occupational opportunities in Nebraska for the next one, and the following two years.

Method. Occupational opportunities in Nebraska were determined by developing a list of all employers that employ people within the state. The total amounted to 62,125 employers. A three percent machine random sampling was made of the total population regardless of firm size and a response was obtained of each firm that was drawn in the sampling through use of student interviewers from the University working in their home areas during vacation period. A special questionnaire was designed for the study which was based on the new Office of Education's Standard Terminology for Instruction in Local and State School Systems. Employers were asked their present employment, anticipated employment change in the next 12 months, and the following two years because of turnover, expansion, retirement, and promotion.

Findings. A total of 142,899 new employees were indicated as needed in Nebraska during the next 12 months and 294,708 more would be needed within the following two years. All employees were classified in the six major vocational sectors by occupational groups which required similar commonalities in educational preparation. The study was specifically designed to be of benefit to vocational education administrators and curriculum makers that plan vocational education programs. All possible procedures were adapted to machine computerization which will minimize labor of the annual updating which is planned for the future.

There were an estimated 133,452 currently employed in agricultural occupations in Nebraska, with 733 opportunities in the next one and 2,067 opportunities in the following two years in professional and managerial agricultural occupations; 9,800 opportunities in the next one and 11,467 opportunities in the following two years in farming and ranching; 2,800 opportunities in the next one and 4,100 opportunities in the following two years in agricultural supplies and services; 500 opportunities in the next one and 667 opportunities in the following two years in agricultural mechanics; 1,767 opportunities in the next one and 5,700 opportunities in the following two years in agricultural products processing; 567 opportunities in the next one and 567 opportunities in the following two years in ornamental horticulture production, processing and marketing; 100 opportunities in the next one and 100 opportunities in the following two years in agricultural resources; 567 opportunities in the next one and 867 opportunities in the following two years in agricultural laborers; 533 opportunities in the next one and 1,300 opportunities in the following two years in agricultural loan officers; and 100 veterinary assistants needed in the next three years.

26. HUGHES, LOYD RAY. The Effects of Selected Occupational Information Upon the Aspired Socioeconomic Status of Pupils in Agricultural Occupations Courses. Library, University of Illinois, Urbana.

Purpose. Part I of the study was to determine the profile of pupils in certain agricultural occupations courses with regard to socioeconomic status, aspired socioeconomic status, fathers' occupations and the pupils' stated occupational goals. Part II of the study was an experiment to ascertain the effect of specific instruction related to occupational information upon the socioeconomic aspirations of the pupils studied.

Method. The sample for the study consisted of 142 pupils enrolled in agricultural occupations courses in grades 9, 10, and 11 in six high schools which were randomly selected from the population of 17 high schools located in a four-county area of East Central Illinois. The Sims Social Class Identification Occupational Rating Scale was used. Pearson correlations, t-test, chi-square, and analysis of variance were used in the analysis of the data.

Findings. The socioeconomic status of the pupils studied centered around the middle-working class while the pupils aspired predominantly to middle-class occupations. Data relative to the aspired socioeconomic status of pupils seemed to indicate that one of the determiners of pupils' aspirations is their socioeconomic level. The study indicated that considerably more emphasis should probably be placed upon providing effective occupational information and guidance concerning nonfarm agricultural occupations to pupils enrolled in agricultural occupations courses, especially in grades 9 and 10.

27. JARMER, GARY EDWARD. Student Involvement in Teaching Selected Lessons of Beef Cattle Production. Master's Report, 1968. Library, Kansas State University, Manhattan.

Purpose. (1) Provide the teachers of Vocational Agriculture in Kansas with a procedure for obtaining student involvement in the teaching of beef cattle selection, feeding, slaughtering, and carcass evaluation; (2) Involve students with beef cattle selection, feeding, slaughtering, and carcass evaluation; (3) Compare the change of scores of the students in a pre and post test exercise which was developed by the author to measure general beef cattle knowledge; and (4) Demonstrate to students the "New Look" in slaughter beef cattle production.

Method. The procedure for the study involved a personal purchase of four beef steers, weighing approximately 800 pounds. Prospective buyers of cut-up, packaged beef were secured and one sophomore student agreed to keep and care for the calves. A pre test designed to measure general slaughter beef cattle knowledge was designed and administered to two separate classes of high school Vocational Agriculture students. The test class was sophomores, the others were juniors. The cattle were selected, purchased and delivered to the cooperating student's farm. Each calf was named and given a letter designation which helped to identify him. Regular teaching continued with all lessons concerning slaughter beef cattle selection, feeding, slaughtering, and carcass evaluation relating to the four steers being used as a teaching device. The cattle were slaughtered and processed by the students and an extensive carcass evaluation study was initiated. Complete photographs were taken on 35 mm slide film to be used for further educational purposes.

Findings. After the carcass evaluation was complete, a post test was administered to both separate classes and the results were recorded. It was found that the sophomore group of students, who were involved in the teaching of selected slaughter beef cattle lessons, using live cattle, had raised from the mean score on the pre test of 45.0 points to a mean score on the post test of 72.06 out of a possible 100 points. This was an increase of 27.06 points on the test. The mean pre test score for the junior class, who had received essentially the same instruction, one year earlier, with the live cattle, was 53.50. The post test mean score for the junior class was noted to be 56.33 out of a possible 100 points. This was an increase of 2.83 points. It was recommended that a follow-up study be made in one year to determine the test scores of the sophomore test group after one year has elapsed. It was also recommended that local cooperating farmers could help conduct this procedure if careful planning was exercised. The purposes of the study were reviewed and compared with the findings. It was found that purpose one was accomplished by sending the procedure of this study to the State Supervisor of Vocational Education in Agriculture, and by submitting the procedure for publication in a national magazine for teachers of Vocational Agriculture. Purpose two was accomplished by subjectively observing an increased score on an objective test. Purpose three was accomplished by observing and recording the test scores of the students. Purpose four was accomplished by subjectively observing student reaction to the photographic slides taken of the live cattle and their carcasses.

28. KLIT, JOHN A. Education and Employment Status of Students Dropped from the College of Agriculture for Academic Reasons. Thesis, M.S., 1968. Library, Iowa State University, Ames.

Purpose. The major purpose of this study was to determine the amount of education completed by students after they were dropped from the College of Agriculture for academic reasons. The employment status at the time of the study was also studied.

Method. Mailed questionnaires and students' transcripts of grades were used to obtain pertinent information on the population of students studied. The questionnaire was designed to be interpreted with reference to the transcript of grades. From these two sources, the desired information was gathered.

Questionnaires were mailed to the 397 students who were dismissed during the academic years 1957-1959. Due to insufficient mailing addresses, 20 students did not receive the questionnaire. Response was gained after three mailings from 335 of the 377 students who received the questionnaire (88.86 percent).

The information from the transcripts and mailed questionnaires was then coded and placed on data processing cards. The cards were then machine tabulated by the Computation Center at Iowa State University.

Findings. Analysis of the returned questionnaires revealed that 43.51 percent of the students who were at one time dropped for academic reasons, had completed a degree granting program at the time of this study (they were referred to as catagory A). Only 23.56 percent of the respondents had not returned to an institution of higher learning after their first failure (referred to as category C). The remaining students (32.93 percent) returned but had not completed a degree at the time of this study (category B). Therefore, of the reinstated students, 56.92 percent had received a degree.

A highly significant chi-square value (beyond the .01 level) resulted when the occupations of the three categories of academically dismissed students were analyzed. The major difference was due to the number of nongraduates who were farming (approximately 30 percent) as compared to the graduates (10 percent), and the number of graduates in agricultural related occupations (50 percent) as compared to the number of nongraduates (23 percent). An equivalent percentage (approximately 45 percent) of the students in all three categories were in nonagricultural occupations at the time of this study.

29. LOVE, G.M. Descriptive Information Related to the Administration of Agricultural Education at Eleven Land Grant Universities in the United States, 1967-1968. Staff Study, 1968. Department of Practical Arts and Vocational Technical Education, University of Missouri, Columbia.

Purpose. To compile descriptive information pertaining to (1) student enrollment; (2) program status; (3) budget; (4) faculty salaries; (5) travel allowances; (6) program goals; (7) special courses; (8) degrees conferred; (9) certification requirements; (10) placement of graduates; and (11) equipment owned.

Method. Data were collected by means of a survey of eleven Land Grant Universities offering doctoral programs in agricultural education. Results are reported in tabular form.

Findings. No attempt was made to summarize findings. Results are reported in 15 tables for the use of administrators and others interested in the outcomes noted in the purposes.

30. MANN, MARVIN W. Selected Agricultural Mechanics Abilities as Rated by Teachers of Vocational Agriculture. Master's Report, 1968. Library, Kansas State University, Manhattan.

Purpose. To survey the opinions of selected vocational agriculture teachers concerning the adequacy of their preservice training in selected agricultural mechanics abilities, and to survey the importance which the vocational agriculture teachers had attached to their instruction in selected agricultural mechanics abilities.

Method. The information for this study was obtained by mailing an opinionnaire to all vocational agriculture teachers in the state of Kansas that were presently teaching at the time of the study and had received their B.S. Degree at Kansas State University from 1960 through 1966. The opinionnaire contained 192 abilities in seventeen areas of agriculture mechanics. Respondents were asked to rate each ability in regard to quality of training as being "good," "fair," or "poor" and importance of training as being "very important," "important," or "not important."

Findings. Of the forty-five opinionnaires which were sent to the teachers of vocational agriculture, 100 per cent of the opinionnaires were returned. The data obtained from the forty-five returns revealed that all the abilities in the following six agriculture mechanics areas were rated as "very important" by 50 per cent or more of the forty-five respondents: (1) training in all agricultural machinery, repair, adjustment and servicing abilities; (2) training in all agricultural carpentry abilities with the exceptions of the ability to "identify wood and lumber," and the ability to "construct complex project;" (3) training in all agricultural electricity abilities with the exception of the ability to "select electric meter;" (4) training in all concrete and masonry abilities with the exception of the ability to "lay brick;" (5) training in all the arc welding abilities with the exception of the ability to "install welder," and the ability to "solder;" (6) training in all oxyacetylene welding abilities with the exception of the ability to "weld aluminum" and the ability to "solder." There were fifty-five other abilities in seven other areas of agricultural mechanics which received "very important" ratings by 50 per cent or more of the forty-five respondents. The areas and numbers of abilities in each included: (1) three abilities in the area of forge and cold metal work; (2) six abilities in the area of tool fitting; (3) eight abilities in the area of soldering and sheet metal; (4) three abilities in the area of painting; (5) twenty-four abilities in the area of tractor maintenance; (6) six abilities in the area of farm power overhaul; and (7) five abilities in the area of irrigation and drainage. An attempt was also made to survey the quality or adequacy of agricultural mechanics training at Kansas State University. Respondents were asked to rate the adequacy of their preservice agricultural mechanics training in preparation for developing that particular ability in their vocational agriculture students. The respondents rated only those abilities in which they had received training at Kansas State University.

31. MAYER, LEON ALBERT. Occupational Education for Meat Inspection and Laboratory Animal Caretaker Jobs. Library, University of Illinois, Urbana.

Purpose. The primary purposes of the study were to determine (1) the opportunities for employment, and (2) the educational requirements of meat inspectors and of laboratory animal caretakers in a 30-county area in northern Illinois.

Method. Employers of meat inspectors and laboratory animal caretakers in a 30-county area were interviewed for information on job opportunities. Sixty representatives of these two areas of employment rated the level of the competencies needed by employees. The chi-square test was used to compare the level of the competencies needed by new workers and by experienced workers and to identify items of competency for which the level of competency needed was not different for meat inspectors and for laboratory animal caretakers. The analysis of variance test and the Pearson correlation were also used to anlayze data obtained from the respondents.

Findings. The study revealed that there were substantial opportunities for employment of persons as laboratory animal caretakers and as meat inspectors. The educational programs recommended were: (1) a high school program to prepare persons for new worker jobs in the two areas of employment studied; (2) a post-high school technology program to prepare persons for animal technician and applied animal science supervisory jobs; and (3) an adult education program for the in-service education of workers. Courses and course content were suggested for the three kinds of occupational education programs recommended.

32. McCASLIN, NORVAL L. Enrollment in Vocational Agriculture Related to Occupational Factors of Nebraska Male Farm High School Graduates. Thesis, M.S., 1967, Library, The University of Nebraska, Lincoln.

Purpose. To analyze, on a state-wide basis, the relationship of enrollment in vocational agriculture to factors associated with the occupations of Nebraska male farm high school graduates who were graduated from high school nine to thirteen years earlier.

Method. Lists of all Nebraska high schools which had offered approved programs of vocational agriculture during at least one of the academic years 1954 through 1958 were developed grouped according to size of high school. Size was based on high school boy enrollment. A proportionate sample of 50 percent or 69 of these schools was randomly selected. A list of 3,192 farm reared males who graduated between 1954 and 1958 obtained from the 69 schools, and a 40 percent sample was randomly selected. Questionnaires were received from 1,120 graduates, or 92.9 percent.

Findings. As the number of semesters enrolled in vocational agriculture increased: (1) fathers farming status increased; (2) size of graduate's home farm increased; (3) educational attainment of parents increased; (4) school size increased; (5) semesters of enrollment in science and mathematics decreased; (6) enrollment of graduates in post-high school institutions decreased; (7) number of years since graduation to start of present job decreased; (8) number of positions held by graduates increased; (9) graduates employed in agricultural occupations increased; (10) value of vocational agriculture in the graduate's present occupation increased; (11) migration of graduates decreased; (12) percentage of graduates operating farms increased. As the number of semesters enrolled in vocational agriculture by graduates decreased: (1) the number of siblings who enrolled in college increased; (2) final grade point average increased; (3) quartile rank in the graduating class increased.

33. McCLURG, RONALD B. Factors Related to Availability of Vocational Agriculture Programs in Iowa. Thesis, M.S., 1968. Library, Iowa State University, Ames.

Purpose. The purpose of this study was to determine (1) the availability of vocational agriculture programs in Iowa, (2) factors appearing to be related to the availability of vocational agriculture programs and to obtain information which could be useful in vocational agriculture reorganization and expansion to meet the educational needs of Iowa youth through the provisions of the Vocational Education Act of 1963.

Method. Two questionnaires were developed to collect the needed data. One was for those schools offering vocational agriculture programs during the 1966-67 school year; the other was to collect data about the schools not offering vocational agriculture during the same period. Responses were obtained from 92.44 percent of the schools surveyed.

Findings. The largest number of schools with a course of study in vocational agriculture had 176 or more sections of land per school district. Nonvocational agriculture schools more frequently had from 51 to 75 sections of land in the school district.

Over 36 percent of those schools offering vocational agriculture reported having more than 401 farms in their districts. This compared to 6 percent for the nonvocational agriculture schools. Less than one percent of the vocational agriculture school districts contained fewer than 150 farms, whereas over 16 percent of the other group of schools fell in this category.

Fifty-two percent of the nonvocational agriculture schools had under 181 students enrolled in high school as compared to 26.38 for the vocational agriculture schools. Although vocational agriculture schools reported more districts exceeding 501 students, the enrollment of the nonvocational agriculture schools having over 501 students was about three times that of the other group.

The numbers of farm boys enrolled in vocational agriculture schools were fairly consistent throughout the distribution with over one-third of the districts reporting between 46 and 75 boys enrolled. Thirty-nine schools reported fewer than 46 and 53 schools reported 96 or more boys. Nonvocational agriculture schools reported 76 schools with fewer than 46 boys, and 24 with more than 96 farm boys. The mean farm by enrollment of the vocational agriculture schools exceeded that of the nonvocational agriculture schools by 21.

It was estimated that 50 percent of the 31,809 15 to 19 year old rural farm males in Iowa have a place in farming or in agriculturally related occupations and should, therefore, have the opportunity to receive agricultural instruction. To meet these agricultural needs, establishment of an additional 104 vocational agriculture departments was suggested. Expansion to multiple-teacher departments was recommended for 52 schools now offering vocational agriculture and 24 of the proposed new departments. An additional 243 teachers will be required to staff these expanded and additional programs.

34. McCREIGHT, M.G. AND ANDERSON, GEORGE. Diesel Servicing: An Industry Approved Two-Year Post-High School Curriculum. Staff Study (USOE Grant), 1968. Department of Agricultural Education, University of Nebraska, Lincoln.

Purpose. To develop a two-year industry approved post-high school curriculum in Diesel Servicing.

Method. Through consultation with twenty-nine industrial organizations and nine institute and vocational-technical schools in the United States, lists of competencies were developed deemed necessary to meet industry's needs in Diesel Servicing. Courses were established to build a background of educational experiences or steps as the student progresses from one course to the next.

Findings. Twenty-six courses were designed. The integrated curriculum includes course outlines, laboratory facilities needed, lists of equipment, tools, and training aids. It is written to be used as an aid in determining teacher qualifications, time allotments, and teaching suggestions.

35. MELIN, KENNETH A. Educational and Occupational Interests and Factors Which Influenced 218 Walsh County High School Seniors in Making Occupational Decisions. Research paper, M.S., 1967. Department of Agricultural Education, North Dakota State University, Fargo.

Purpose. To assess attitudes and motivation of senior students of the class of 1966 enrolled in the high schools of Walsh County with respect to their plans for educational training following completion of high school and their occupational plans; also to appraise the influence of selected factors on students in making occupational choices.

Method. The survey method was used to obtain data for this study. The questionnaire used was developed in cooperation with the North Dakota Center for Research in Vocational and/or Technical Education. The data in the study were based upon replies returned from 218 high school seniors enrolled in high schools in Walsh County offering senior high school instruction through the twelfth grade during the 1965-1966 school year.

Findings. Fifty-four per cent of the high school seniors in Walsh County come from communities with a population of 2,500 or more. Thirty per cent lived on farms, twelve per cent in communities of 1,000 to 2,500 population, and four per cent come from communities with less than 1,000 population.

Sixty-seven per cent of the Walsh County seniors indicated they planned to continue their formal education upon completion of high school, thirteen per cent planned to get a job, seven per cent planned to enter the military service, two per cent planned to work at home, and eleven per cent indicated they had no definite plans.

Forty-five per cent of the seniors surveyed indicated they planned to attend a college or university after completion of high school, fifteen per cent planned to attend a business or trade school and seven per cent indicated they planned to attend other kinds of schools.

Professional and semi-professional occupations accounted for the occupational interests of sixty-one per cent of the seniors surveyed in Walsh County. The category of proprietors, managers, and officials was of interest to sixteen per cent; farming and ranching was of interest to ten per cent; eight per cent indicated an interest in clerical, sales and kindred occupations; and five per cent indicated an interest in becoming farm workers, skilled and semi-skilled workers, and unskilled laborers.

Having time for one's family and interesting work were the most important reasons for choosing an occupation according to the respondents in the survey. Other important reasons for selection of an occupation included: opportunity to help others, opportunity to get ahead rapidly, being able to look forward to a stable secure future and income.

Teachers were by far the most helpful to the seniors surveyed in making their occupational choices. Ranking next in helpfulness were principals and/or superintendents and parents or guardians.

36. MOLLER, FREDERICK H., JR. A Study to Measure the Effectiveness of Wyoming's Adult Education in Agriculture. Colloquium, M.A., 1968. Agriculture Education, University of Minnesota, St. Paul.

Purpose. To determine if the Adult Education offered by Agriculture Departments in Wyoming are meeting the needs of today's farmers and ranchers.

Method. The writer sent a questionnaire to past enrollees from the years 1963-1967. The enrollees were either farm or ranch owners, renters or managers. The mailing list was obtained from adult class enrollment forms sent to the State Department of Education and the addresses obtained from the Agriculture Instructor. The respondent either responded "yes" or "no" to the question or rated the question from one through seven as to degree of effectiveness.

Findings. Of 51 schools offering Vocational Agriculture, an average of 13 will offer Adult Courses. Over the past 5 years, Wyoming has only 4 schools offering at least one 10-week two hour course per year. 72 per cent of the courses offered have been in welding, and many of these enrollees were persons in nonagriculture professions.

In rating Wyoming's adult agriculture program, 85 per cent indicated they were satisfied with the present two hour 10-week method of instruction. Nearly two-thirds of the respondents indicated their willingness to join a vocational agriculture farm-ranch management program utilizing a record keeping system and using this tool to increase efficiency and improve income. The management areas of agriculture were in need of added emphasis. Wyoming should expand the adult program and where enrollment is obtained, center the program around a systematic instruction utilizing a record keeping and analysis system similar to the one used by Minnesota.

37. MURRAY, JOHN JAMES. Farm Power, Machinery and Electricity Practices Completed by Selected Farmers in Vocational Agriculture Farm Management in Southern Minnesota. Thesis, M.A., 1968. Agriculture Education Department, University of Minnesota, St. Paul.

Purpose. To determine how farmers in the vocational agriculture farm management program of southern Minnesota completed practices in farm power, machinery and electricity.

Method. Records were taken from farmers in southern Minnesota who had completed farm analysis summaries for 1964, 1965, and 1966. The questionnaire was in two parts. Part one included information on costs relating to the areas of farm power, machinery and electricity. This part was filled out by the instructor at the school. Part two with a letter of explanation was sent to farmers for completion. It consisted of background information and a checkoff list of 15 practices in farm power, 15 in machinery and 15 in electricity.

Findings. Approximately 50 per cent of electrical practices, when compared to all factors studied, were completed by the farmers themselves. As farmer's operator labor earnings increased, they relied more on commercial firms to complete more practices. The renter will hire more practices completed than the owner. Farmers who completed three to four years of vocational agriculture and those with no vocational agriculture completed less practices by commercial firms than did those with one or two years of vocational agriculture. The younger farmers and those with the least years of farming and farm management instruction relied on commercial firms to complete more electrical practices than did the older farmer and those with more years of farming and farm management instruction.

The farmers, regardless of level of operator labor earnings, age and years of farming completed better than 64 per cent of the farm power practices by themselves. Commercial firms completed approximately 20 per cent of practices except the farmers with high operator labor earnings used commercial firms to complete 30 per cent of practices.

When machinery practices were compared to years of high school vocational agriculture, years of farming, age, and operator labor earnings, it was found that the farmers completed over 85 per cent of these practices by themselves and had commercial firms complete less than 10 per cent of the practices.

38. NATTRESS, WAYNE A. Competencies in Crop and Soils Science Needed by Vocational Agriculture Instructors. Thesis, M.S., 1967. Library, Iowa State University, Ames.

Purpose. The purposes of this study were: (1) to develop a list of competencies needed by vocational agriculture instructors in teaching crop and soils science; (2) to determine the degree of competencies needed and the degree of competence possessed; (3) to determine the factors affecting the degree of competence needed and possessed; and (4) to determine the sources from which the competencies were obtained.

Method. A panel of consultants consisting of selected vocational agriculture instructors and Iowa State University specialists prepared a list of competencies in crop and soils science needed by vocational agriculture instructors. The list of competencies along with selected control items were included in a questionnaire form which was mailed to all the experienced vocational agriculture instructors in Iowa. Of the 225 questionnaires sent, 156 or 69.3 per cent were returned.

Findings. Forty competencies in crop and soils science were listed by the panel of consultants of which 25 were understandings and 15 were abilities. Instructors evaluated the following competencies as being the ones with most competence needed: (1) fertilizer selection and use; (2) safe and proper use of farm chemicals, herbicides, and insecticides; (3) soil sampling, testing, and interpretation of tests; (4) interpret soil tests and make recommendations; (5) disease and insect control; (6) use and relationship of lime, fertilizers and manure; (7) planting dates, rates, and depth; (8) methods of weed control; (9) determine planting rate, stand and probably yield; and (10) recognize major plant nutrient deficiencies.

Vocational agriculture instructors having the greatest overall need for competence in crop and soil science were (1) instructors who had completed four years of vocational agriculture in high school, (2) instructors who had completed some graduate work, (3) instructors teaching in large high schools, (4) instructors with enrollment of from 30 to 39 day-class students, (5) instructors who made an average of five on-farm visits per student, (6) instructors conducting one adult and one young farmer class, (7) instructors who had taught vocational agriculture from 1 to 5 years, (8) instructors with high salaries, and (9) instructors who had taught vocational agriculture in four or more high schools.

Findings of this study indicated that all 40 of the crop and soils science competencies evaluated were needed to some degree by vocational agriculture instructors in Iowa. The findings also imply a definite need for more extensive training in the crop and soils science for prospective vocational agriculture teachers in their undergraduate study, as well as for an improved and expanded in-service training program for experienced instructors.

39. NOLAND, WARREN GERALD. Migration Patterns of Vocational Agriculture Graduates in Ohio. Dissertation, Ph.D., 1968. Library, Ohio State University, Columbus.

Purpose. To investigate the migration patterns of vocational agriculture graduates in Ohio during their first five years following high school graduation.

Method. Former vocational agriculture students who had graduated from high school in 1963 were identified from 45 randomly selected departments in Ohio. Of 345 graduates identified, 67 were in the military service and were excluded from the study. Two graduates were deceased. Questionnaires were sent to 276 graduates. A 70 per cent usable response prompted a telephone survey which indicated that the respondents were typical of the nonrespondents in the sample. Chi-square analysis was used to establish the significance of relationships between migrant status and selected characteristics of the graduates.

Findings. Five years after high school graduation four of every five graduates, excluding those in military service, were living within 25 miles of their home communities. Less than one in 10 graduates was living more than 100 miles away from their home communities. A majority of the migrants had completed at least two changes in residence since high school graduation. The major reasons for the first move were for marriage, college, or employment. The single most important factor influencing all changes in residence was the search for employment.

Significant relationships that existed between migrant status and selected characteristics of the graduates included residence of origin, father's occupation, marital status, military service, first occupation, and current occupation. There were no significant relationships between migrant status and level of education of parents, size of parental family, estimated level of parental income, estimated rank in graduating class, level of formal education, type of formal education beyond high school, or the number of jobs held since high school graduation.

40. OLIVER, CRAIG STANLEY. Influence of Selected Factors Upon the Learning of Landscape Design Concepts. Dissertation, Ph.D., 1968. Library, Ohio State University, Columbus.

Purpose. The major purpose of this study was to determine the relative effectiveness of a series of landscape meetings and a supplemental illustrated landscape circular in teaching landscape design concepts to interested adult groups.

Method. A series of four landscape meetings were held in ten randomly selected Pennsylvania counties. A total of 204 adults preregistered and attended the meetings.

Teaching objectives were formulated to assist in determining the educational activities needed in planning the four-meeting series. Time was allocated at each meeting for a presentation by the instructor, and approximately half the meeting period was allocated for the participants to work on their individual landscape plans. In five of the counties where meetings were held the participants were given a supplemental illustrated landscape circular. Suggested reading assignments were given to participants receiving the circular.

Three measurement instruments were used in the study. The first instrument was administered to all respondents as a pre-test and post-test to measure the gain in knowledge following the completion of the four-meeting series.

The second instrument was a standardized spatial relations test. This instrument was administered to all respondents.

The third instrument was a landscaping rating scale. The purpose of the instrument was to measure the quality of the landscape plans completed by all participants at the end of the four-meeting series.

Findings. Analysis of the data indicated there was a direct relationship between participants formal education level and spatial aptitude scores and their ability to develop a landscape plan. However, there was no significant difference between adult groups receiving the illustrated circular and those who did not in their ability to develop a landscape plan.

Adult groups who received the supplemental circular did significantly better on a test of information recall administered after the four landscape meetings than those who did not receive the circular. Also, adults with higher spatial aptitude scores and formal education levels did significantly better on a test of information recall than adults with lower spatial aptitude scores and formal education levels.

41. PARKS, DARRELL LEE. Attitudes and Principles Regarding Vocational Education in Ohio. Thesis, Ph.D., 1968. Library, Ohio State University, Columbus.

Purpose. The major purposes of the study were to determine: (1) The extent to which public school superintendents, vocational education state supervisory personnel and teacher educators were favorable toward vocational education in the public school; (2) The relationship between selected characteristics and attitudes regarding vocational education; (3) The extent to which selected vocational education principles were accepted; (4) If superintendents of small and large school systems differed significantly in their attitudes and acceptance of principles related to vocational education; (5) If there was a relationship between one's attitude and his degree of acceptance of vocational education principles.

In addition, an effort was made to identify the most common suggestions for improving vocational education in Ohio.

Method. The study was limited to a 25 per cent random sampling of Ohio's 661 public school superintendents and all vocational education state supervisory personnel and teacher educators. Responses were received from 245 of the 261 who received mail questionnaires.

The data were tabulated and analyzed through mean ratings, standard deviations, the Student t-test, the Pearson product-moment correlation coefficient, and a one-way analysis of variance test.

Findings. Findings revealed that superintendents, supervisory personnel, and teacher educators were favorable toward vocational education and accepted the selected vocational education principles. School size had no significant effect upon superintendents' attitudes nor their acceptance of principles, although a strong, positive correlation existed between attitudes and principle acceptance.

Factors such as position and area of certification had a significant effect upon attitudes. However, age, years of service, educational level, occupational experience, and parents' occupational status were not significant.

Suggestions for improving vocational education included program expansion and improved communications, guidance, financing, administration, curricula, teacher preparation, and program planning and evaluation.

42. PLETSCH, DOUGLAS HARRY. Communication Concepts Used by Adult Educators in Agriculture to Implement Educational Change. Thesis, Ph.D., 1968. Library, the Ohio State University.

Purpose. To identify, define and operationalize the communication concepts required by adult educators in agriculture to fulfill their role as educational change agents.

Method. A review of research reports and projections by experts in agricultural education was conducted and these relevant technical, social and economic trends were reviewed to construct a list of changes which needed to be effected in agricultural education to cope with these trends.

Based on this review a list of anticipated intellectual behavioral requirements for future competence in communication was developed for educators in agricultural education.

An extensive review of literature written by authorities in the field of communication served to identify relevant communication concepts.

Based on the definitions and explanations of the most important communication concepts, a list of educational objectives for training programs was suggested.

Findings. A list of two-hundred and seventy-five concepts was compiled. Twenty-seven of these concepts passed a series of four screening tests developed for the purpose of identifying the most important communication concepts. The application of these concepts was shown by situational analysis of critical incidents experienced by adult educators in agriculture. This process identified the relevance of the concept to the intellectual behavioral requirements of the change agent. In addition, the relation of the major concept to other communication concepts was described and the concept was clearly defined.

Suggested educational objectives were identified for graduate and in-service educational programs for adult educators in agriculture.

43. PRIEBE, DONALD W. A Study of the Job and Educational Experiences of the 1959 Vocational Agriculture Graduates of Selected North Dakota High Schools. M.S., Research Paper, 1967. Department of Agricultural Education, North Dakota State University, Fargo.

Purposes. To determine the job and educational experiences of 1959 vocational agriculture graduates of related North Dakota high schools including:

1. Their job or occupational status as of October, 1959.
2. Their present job status.
3. The highest level and the nature of their formal educational experience.
4. The number of different types and grades of jobs they had held, and
5. Their present geographic location.

Method. The graduates of 1959 were selected as the subject of the study because they had been out of school long enough to have completed most of their formal education and to have, in most cases, established themselves in an occupational field. A questionnaire was used to gather information. A total of 120 questionnaires were returned from a mailing list of 170 graduates.

Findings. A review of the status of graduates as of October, 1959, indicated that 51 or 42.5 percent were engaged in agricultural occupations. Forty-two of these were in production agriculture and nine in agri-business jobs.

Twelve or 10.0 percent of the graduates were employed in non-agricultural jobs, 48 or 40.0 percent were students and nine or 7.5 percent were serving in the armed forces.

More than 80.0 percent of those who had taken jobs were involved in agricultural occupations.

Sixty-eight or 56.7 percent of the group were engaged in agricultural occupations. Forty-three were in production agriculture, 17 in agri-business and eight were professional agriculturists.

Forty-four or 36.6 percent were employed in non-agricultural jobs and eight or 6.7 percent were serving in the armed forces.

More than 60.0 percent of the graduates who were employed and were not in the armed forces were in the field of agriculture.

Twenty or 16.7 percent had some college training in agriculture. One was working beyond the Master's degree, two had Master's degrees, five had Baccalaureate degrees in agriculture and five had one but less than two years of college education in agriculture. Two were working on or planning to work toward the Ph.D. degree in agriculture.

Twenty or 16.7 percent had done college work of a non-agricultural nature. Five of these had earned the Baccalaureate degree and two had earned Master's degrees.

The total college education included one who had gone beyond the Master's degree, four with the Master's degree and 17 with the Baccalaureate degree. A total of 22 had earned college degrees.

The highest level of formal educational experience was in vocational and/or technical or other schools for 36 or 30.0 percent of the group.

Forty-four had no formal training beyond high school.

The greatest number of different types or grades of jobs held was seven. Forty-eight or 40.0 percent of the group had held only one type or grade of job. Ninety-seven or 80.8 percent of the graduates had held three or fewer different types and grades of jobs since graduating from high school.

Eighty of the 120 member group were living in North Dakota. Sixty-one of these lived in the community in which they graduated from high school and 19 lived in other communities in the state.

Thirty-two or 26.7 percent of the graduates had left the state and eight or 6.7 percent were serving in the armed forces.

More than 70.0 percent of those who were employed and who were not in the armed forces were living in North Dakota.

44. PRIEBE, DONALD WALTER. An Interest Inventory of Minnesota Farmers. Dissertation, Ph.D., 1968. Library, University of Minnesota, Minneapolis.

Purpose. To compile an inventory of the interests of Minnesota farmers and to compare these interests to those of men-in-general as identified by the Strong Inventory. Specific objectives of the study included:

(1) The establishment of a new farmer criterion group for the Strong Vocational Interest Inventory and the development of a new farmer occupational scale.
(2) A detailed comparison of the interests of the 1936 farmer criterion group with those of the 1968 criterion group.
(3) A comparison of high and low income farmers on the basis of interest inventory responses.

Method. The Strong Vocational Interest Inventory For Men, Form T 399R, was the instrument used for the study.

The sample included 235 farmers enrolled in the Minnesota Farm Business Management Analysis Program in 26 schools. They had farmed for at least three years.

The mean age of the criterion group was 41.3 years. The mean number of years of school completed was 11.2.

The individual inventories were scored and standard score means and standard deviations for the basic, occupational, and non-occupational scales were calculated. The *t* scores for differences between means were computed.

The response percentages of the farmers were calculated for each of the 399 items on the Inventory. Differences between these percentages and those of men-in-general were computed. These percentage differences were used to construct a new farmer occupational scale.

Findings. The interest patterns of the highest and lowest income sub-samples of the group were compared. These interest patterns were not significantly different.

There were numberous and significant differences between the interests of the 1936 and 1968 farmer criterion groups. The 1968 group exhibited a higher degree of interest in agricultural, outdoor, and mechanical activities. The 1936 group scored higher on occupational scales involving working with people. The most striking difference between the two sample groups was the much higher educational level of the 1936 sample.

A new farmer occupational scale was constructed. This scale contained seventy-eight items. Forty-one of these also appeared on the former sixty-five item scale. The new scale contained thirty-seven new items.

45. PROCHASKA, DEAN M. Using the Kuder Vocational Preference Test in an Agricultural Occupations Unit. Master's Report, 1968. Library, Kansas State University, Manhattan.

Purpose. To compare the effectiveness of having a student experience an agricultural occupation in the area of his choice in contrast to the student receiving an experience not in the area of choice. The study was undertaken for the following reasons: (1) Non-farm agricultural occupations are increasing and the number of farmers and ranchers is decreasing; (2) Vocational agriculture departments have been designated to train individuals in agriculturally related occupations; (3) Many vocational agriculture departments are in the small communities which have only a limited number of businesses to serve as work stations; (4) Students often show an interest in an area not available for exploration on the local level; (5) Many of the skills needed for an occupation are similar to the skills needed to another occupation

Method. The Kuder Vocational Preference Test was used to test the students in the study. It was first given as a pre-test after the student had indicated a choice of an agricultural occupation. The students were then divided in two groups according to occupational choice. One group was placed in the area of choice of an occupation. The other group was placed in an occupation not in the area of choice. At the end of the three weeks exploration period, the two groups were again tested using the same Kuder Vocational Preference Test as a post-test.

Findings. The students with a choice of an occupational experience increased their average post-test scores in six of the ten phases for which the Kuder tested. The six students experiencing an occupation not of their choice increased their post-test scores in five of the ten areas being tested. A comparison of the differences in the pre-test and the post-test scores for the two groups revealed the no-choice group had a wider variation between the gains and losses in the pre-test and the post-test scores for the individuals within each group. Because of the limitations of such a small group being tested, the types of occupations available to be explored, the kind of community in which the study was made, this study should be repeated under other circumstances and with a different interest test being used as a measuring device. The six students making up the choice of an occupations group may have had a slight advantage to the six students experiencing an occupation in the area of no-choice. Their intelligence quotient scores, scholastic records and leadership abilities indicated to the researcher that this would be true. Whether this advantage was great enough to influence vocational educators who plan the curricula, was questionable to the researcher.

46. PUMPER, FRED J. Determination of Subject Matter Units Taught in Wisconsin and The Extent of Contribution Made Toward Meeting The National Objectives of Vocational Agriculture. Thesis, 1968. Department of Agricultural and Extension Education. University of Wisconsin, Madison.

Purpose. To identify the subject matter units taught and length of time allotted to ascertain contribution made by categories of subject matter toward national objectives. To describe characteristics of instructors and conditions under which they teach.

Method. Data on 131 subject matter units were obtained by questionnaire from a sample of Wisconsin vocational agriculture instructors. Instructors were requested to identify the units they taught and time allotted and extent of contribution the unit made toward national objectives. A four response continuum was used to ascertain the extent of contribution made.

The dependent variables of time alloted and contribution toward attaining a national objective were related to Wisconsin economic areas and instructor's tenure in the present school.

Findings. Instructors taught a mean of 12.6 years of which a mean of 9.5 years were in the present school system. Fifty percent of the instructors were in the present school system six or more years. Mean age of the instructors was 37.3 years. There were 27 percent of the instructors who held a master of science degree, and 57 percent of the instructors have earned credits beyond a bachelor of science degree.

Sixty-seven percent of the high schools are located in a municipality of less than 2,500 people, and 74 percent of the schools with agricultural departments are over 20 miles from a municipality of 25,000 or more. Fifty-two percent of the high schools offering agriculture had an enrollment of 400 students or less, and 11 percent of the schools had an enrollment over 1,000 students. There were 64.9 students per instructor and 19 percent of the agricultural students were not from farms.

Almost 85 percent of the teachers' instructional time was allotted to teaching the following subject matter categories: animal science (22.2 percent), farm business management (18.3 percent), agricultural mechanics (23.3 percent), plant science (12.8 percent), and soil science (8.3 percent). These categories of subject matter contributed at a major level toward attaining Objective I (production agriculture competency), and at secondary level toward attaining Objective II (agricultural related occupations competency). If careers (3.2 percent), leadership (2.6 percent), and off-farm agricultural mechanics (4.0 percent) subject categories are included with the above categories, it includes 95 percent of the total instructional time.

47. RAWSON, WILBUR. The Role of the State Supervisory Staff in Improving the Instructional Program of Vocational Agriculture Departments. Master's Report, 1968. Library, Kansas State University, Manhattan.

Purpose. To survey the opinions of selected vocational agriculture teachers concerning practices used by the State of Kansas supervisory staff in improving instruction and evaluating vocational agriculture departments in Kansas.

Method. A questionnaire of twenty-four items was developed which surveyed opinions related to practices used by supervisors in performing their supervisory functions. The questions concerning supervisory practices were grouped into five areas. The five areas were: promotion of the vocational agriculture program; improvement of the vocational agriculture program; maintenance of the vocational agriculture program; and processes that implement the supervision of vocational agriculture departments. The questionnaire was sent to forty vocational agriculture teachers.

Findings. In analyzing the responses by the teachers to the supervisory practices, a weighted value was assigned each degree of agreement or disagreement. A response of strongly agree was given a value of plus two; agree was given a value of plus one; disagree had a value of minus one; and strongly disagree was given a value of minus two. Thirty-five of the forty teachers returned completed questionnaires. Those supervisory practices related to improvement of instruction of the vocational agriculture program received the highest average numerical value. It was found that teachers expected supervisors to use practices that assisted them in developing effective vocational agriculture programs. Vocational agriculture teachers expected supervisors to discuss problems of their program with local school administrators, as well as suggesting improvements in teaching techniques used in instructing the vocational agriculture classes. According to the responses of the teachers surveyed, it was indicated that teachers wanted a written supervisory report returned to the school after a supervisory visit had been made. The following practices were also rated above the value established as important by the researcher: notify the teacher before making a supervisory visit; make one summer supervisory visit, and inform the teacher of other teaching jobs that were available. The practices of visiting the guidance department in the high school to discuss opportunities available for students taking vocational agriculture and the practice of assisting the vocational agriculture teacher develop adult and young farmer classes were rated as important in promoting the vocational agriculture program in the high school. The practices of assisting in developing a stronger F.F.A. chapter and requiring an outline of the objectives and philosophies of the vocational agriculture program were not accepted by the teachers as important functions of supervision. Teachers felt supervisors should be asked to assist in the formal evaluation of the vocational agriculture department. The practices of the supervisor evaluating the program of study and assisting the teacher in establishing an advisory council were not judged important by the teachers. In response to the question concerning the number and length of supervisory visits, the teachers surveyed selected two visits, of two hours each, per year as desirable for effective supervision.

48. RODERICK, C. V. AND LOVE, G. M. Graduates of Agricultural Education at the University of Missouri - A Look at Their Employment Status from 1946-1967. Staff Study, 1968. Department of Agricultural Education, University of Missouri, Columbia.

Purpose. To answer the following questions: (1) How many persons qualified to teach vocational agriculture? (2) What types of initial employment did graduates select? (3) How many were placed in Missouri? (4) What is the present employment status of graduates? and (5) How has enrollment in agricultural education compared with enrollment in the College of Agriculture?

Method. Data were obtained by a survey of placement records in the department and in the College of Agriculture. Enrollments were determined by year and term of graduation, and by type of initial employment within and outside the state. Conclusions relative to the questions posed above, were drawn based on the number of students graduated, placement of students and teaching tenure of graduates.

Findings. The number of persons qualifying to teach vocational agriculture has been gradually increasing since 1962-63. During the 1946-1967 period, seventy-one percent of University of Missouri (UMC) graduates in agricultural education were initially placed as vo-ag teachers. Another four percent elected "other teaching" positions. Eight percent continued their education, six percent chose an assortment of "other occupations", and only one percent were not placed initially. Four percent of the graduates who did not teach initially, later accepted vo-ag teaching positions.

Ninety percent of the graduates between 1946-1967 who accepted teaching positions were placed in Missouri. During the 1962-1967 period, seventy-four out of seventy-six teachers were placed in the state.

Almost one-third (29%) of all graduates from 1946-1947 were teaching vo-ag in 1967. Another 16 percent were in other teaching positions. Five percent were in agricultural extension positions and five percent were farming. Three percent were in government jobs. Two percent were in the armed services. Eleven percent were employed in miscellaneous positions. No information was available for 15 percent of the graduates. One percent were deceased.

The percentage of students in the College of Agriculture enrolled in agricultural education steadily declined between 1946 and 1968. Whereas 13.2 percent of the graduates were in agricultural education in 1946, only 7.3 percent were enrolled in 1968.

49. SHAMI, MOHAMMAD ANSAR AHMED. Information-Transmission Function of Vocational Agriculture Students' Activities and the Exposure of Their Parents to Agricultural Information Through Such Activities. Thesis, Ph.D., 1968. Michigan State University, East Lansing.

Purpose. To determine the "information-transmission potential" of student activities in numerical figures (referred as ITPS) through a panel of judges; parent's rating regarding value of student activities for their farming business; relationship between "judges" and "parents" rating; relationship between ITPS and frequencies of parent's attendance in activities (referred as Attendance Frequencies); frequencies with which activities were conducted (referred as Frequencies Activities conducted); relationship between ITPS and "Frequencies Activities Conducted"; relationship between "Frequencies Activities Conducted" and "Attendance Frequencies"; and relationship of parents' characteristics with their "Exposure Scores" and "Attendance Frequencies".

Method. A panel of twelve judges rated 26 student activities with regard to their information-transmission potential in terms of numerical figures. As a result of this each activity was assigned an ITPS.

Thirty schools where vocational agriculture departments were at least ten years old, where the agriculture teachers had been working for the preceding four years and which were lying within 100 mile radius of Lansing were included in the study. The researcher visited all the schools personally.

A questionnaire was prepared and given to the teachers to gather information regarding the "frequencies with which different activities were carried on by the students."

A separate questionnaire was designed to secure information from the parents regarding their characteristics, their farming business and their "Attendance Frequencies". The students were requested to give the questionnaires to their parents and bring the completed questionnaires back to school.

The strength of the relationship between parents' characteristics and the extent of their exposure to agricultural information (determined according to "Attendance Frequencies" and "Exposure Scores") was calculated by "Omega Square" test.

Exposure scores were calculated by multiplying "Attendance Frequencies" with the respective ITPS's of the activities.

Other correlations were calculated by rank order correlation.

Findings. 1. The activities were well differentiated on the basis of their ITPS by the judges. The range of scores varied from 2.56 to 0.67. The interjudge reliability coefficient was .8898.

2. Parents also differentiated the student activities according to the value they saw in these activities for their farming business. The range of parents' rating about the activities varied from 2.26 to 1.30.

3. The relationship between parents' rating and judges' rating was significant (P = .7190).

4. The relationship between ITPS of activities and "Attendance Frequencies" of parents was significant (P = .5775).

5. "FFA meetings", "Demonstration plots", "Radio and TV Shows put up by students" were the activities most frequently undertaken by the students whereas, "Seed judging contests", "Forestry contests", and "Meat Judging Contests" were the activities least frequently undertaken by students.

6. The relationship between ITPS of activities and the Frequencies Activities Conducted was non-significant.

7. The relationship between "Attendance Frequencies" of parents and the "Frequencies Activities Conducted" was statistically significant (P = .6449).

8. The parents' characteristics of "education", "farm size" and "net income" were positively related with both their "Exposure Scores" and "Attendance Frequencies". The parents' characteristics of "family size" (According to number of children in the family) had a curvilinear relationship with both "Exposure Scores" and "Attendance Frequencies". Whereas "age" has curvilinear relationship with "Exposure Scores".

their opinions about the value of student activities for

If it is desired that student activities may be used for disseminating agricultural information among farmers, then it is recommended that the activities with high information-transmission potential may be conducted more frequently, the activities with less potential may be modified to enhance their potential, and necessary coordination may be secured between agriculture teachers and cooperative extension agents.

50. SHIRLEY, DELBERT WALLACE III. Normative Expectations Held By Agriculture Teachers and Their Significant Others of the Professional Role of the Agriculture Teacher in the Vocational Agriculture Schools and Colleges in Thailand. Thesis, Ph.D., 1968. Michigan State University, East Lansing.

Purpose. Although teacher role studies have become common in the United States, few have been made in the developing countries, and none have been done in Thailand. The objective was to determine what the professional role of the vocational agriculture teacher in Thailand should be as perceived by vocational agriculture teachers and by individuals whom they had identified as holding significant positions in relationship to their professional role.

Method. Role studies done in the United States and literature on vocational agriculture education in Thailand were reviewed prior to departure for Thailand. Upon arrival a Thai counterpart was assigned and an advisory committee selected. The advisory committee helped select the sample from nineteen schools and served as a jury of experts to validate the questionnaire. Interviews were conducted with English-speaking authorities on agricultural education in Thailand to identify role behaviors and issues in the role of the vocational agriculture teacher. The questionnaire was translated into Thai by the counterpart. Three Thai agriculture teachers then translated the questionnaire back into English in order to validate the accuracy of the translation. The questionnaire was pilot tested at an agricultural school. At the eight sample schools the usual procedure was to administer the questionnaire to all faculty simultaneously.

From questionnaire data responses agriculture teacher significant others were ranked, subrole means were ranked to identify role priorities, means were calculated to identify average response to each role item, standard deviations were calculated to indicate the degree of consensus on each role item, and a "t" test was used to identify significant differences between groups.

Findings. One hundred thirty-eight items that should be done were identified of which respondents said 123 should be carried out by agriculture teachers. Role items were identified which should be done, were considered optional, and which should not be done. High or low consensus was identified for each item. Divergent expectations between agriculture teachers, administrators, and technical agriculture teacher trainers were identified. Role priorities were ranked for each of these position groups. The following conclusions were drawn:

1. Agriculture teachers first turn to fellow agriculture teachers in the same school for advice on teaching problems; they may then turn to administrators in their schools, supervisors from the Department of Vocational Education, and technical agriculture teacher trainers, respectively, They would turn to academic and education teachers and students last.

2. Each of the four position groups studied held different beliefs about what agriculture teachers should do.

3. Agriculture teachers and technical agriculture teacher trainers were in closest agreement on what they indicated agriculture teachers should do.

4. Of all groups the group of agriculture teachers and of administrators disagreed most on what agriculture teachers should do.

5. Development of the agriculture teaching profession, and providing support for the instructional program were believed the more important activities to be done by agriculture teachers.

6. Developing and maintaining relationships beyond the school was believed by the respondents to be least important for the agriculture teacher to do.

7. Attributes such as sex, and prior experiences such as training were not variables which influenced what agriculture teachers indicated agriculture teachers should do.

8. There were greater differences between position groups as a function of position than within position groups as a function of attribute or prior experience on what respondents said agriculture teachers should do.

9. There is a difference between the role as performed and how the respondents said it should be performed.

10. The role, as the respondents indicated it should be, is relevant to the aims of vocational agriculture training as identified in this study.

51. SHOEMAKER, LEROY A. Farming Opportunities in the Rochelle Township (Illinois) School District. Thesis, M.S., 1967. Library, Iowa State University, Ames.

Purpose. The purposes of this study were to determine: (1) the farming opportunities for young men in the Rochelle Township (Illinois) High School District, (2) the probable time of retirement from farming of present operators, (3) the number of sons of present operators who are now farming or are potential farm operators, and (4) the characteristics of present farms and operators which may influence future farming opportunities in the community.

Method. Farmers in the Rochelle School District were individually contacted by one of the vocational agriculture instructors in the Rochelle vocational agriculture department. All farmers in the area were visited with 308 farmers providing information necessary in completing the schedule.

Findings. Only 29.2 percent of the operators owned the land they farmed, whereas 42.2 percent rented land. A little over one-fourth (25.6 percent) of the operators were owner-renters.

Seventy-one (23 percent) of the operators had eight grades or less years of schooling. Twenty-five (8.1 percent) operators had completed 1 to 3 years of college, whereas 13 (4.2 percent) had graduated from college. The farm operators who had the most education were farming the largest farms and owned a higher percentage of their land.

A higher percentage of operators reporting no employment off farm were operating farms of 241 acres or more, than operators who were employed off-farm.

Two hundred thirty-seven operators were 36 to 65 years old, whereas 92 were 46 to 55 years of age. There were 68 operators who were in the age group of 56 to 65 years, and 20 operators who were in the age group of 66 years and over. The mean age of all farm operators in the district was 48.25 years.

Seventy percent of the operators in the study were not employed off the farm. Fifty-six operators were employed from 10 to 30 percent of the time off farm. Operators employed more than 40 percent of the time off farm were 37 in number. Twenty-two of the operators were employed off farm for more than 90 percent of the time.

Of the 34 operators retiring before 1971, 31 were older than 55 years of age and only three were younger than 55 years of age. The operators who indicated retirement from 1971 to 1980, and were over 55 years of age, were 55 in number, whereas 58 anticipated retirement under 55 years of age. Most of the operators interviewed anticipated retirement around the age of 65, due to social security.

Forty-five (38.8 percent) of the 116 sons away from home were farming. Over one-third (33.6 percent) were in non-agriculture occupations, whereas less than one-third (27.6 percent) were in off-farm agricultural occupations.

There were only three operators in the district under 26 years of age. There were 48 operators in the 26 to 35 age group. An average of 4.5 operators apparently began farming in the district each year during the past 10 year period.

It was estimated that the average annual need for replacement operators in the Rochelle district would be approximately seven operators per year for the next 15 years. If 40 percent of the vocational agriculture graduates, and 40 percent of the sons employed in off-farm and in nonagriculture occupations want to farm, there would be a shortage of 1.4 operators per year during the next 15 years.

52. SIEKMAN, DARREL. Employment Opportunities in the Grain and Feed Industry in Nebraska. Thesis, M.S., 1968. Library, The University of Nebraska, Lincoln.

Purpose. To determine the employment opportunities in the grain and feed industry in Nebraska.

Method. A random sample of 25 per cent of the 995 total grain and feed dealers from the "Nebraska Grain and Feed Directory and Buyers Guide 1968" was selected. The data collection instrument was prepared and questionnaires were mailed to each of 250 random dealers included in the sample. By telephone, a 25 per cent double-sample of the 49 non-respondents was obtained to insure a more representative sample of the population. A total of 220 grain and feed businesses responded for an 88 per cent return.

Findings. Grain was reported to be the most important first source of income for the grain and feed businesses studied. Feed was reported as the most prominent second and third source of income. Other sources of income for the grain and feed businesses include dehy, petroleum, chemicals, seed, storage, drying, grinding, hardware, lumber, and general farm supplies.

In the next five years, by 1973, employers anticipate an increase of 1,922 full-time employees, 1,751 men and 171 women. By 1973 there is a projected need for 2,196 persons to be employed part-time in the grain and feed businesses in Nebraska, or an increase of 720 persons over 1968 for a 32.8 per cent increase.

An anticipated additional 720 part-time persons will be needed in the grain and feed industry in Nebraska in the next five years or an annual need of 144 persons.

Employers reported that eight job categories out of the twelve studied are most likely to need on-the-job training experience. Nearly all clerical workers were reported to need previous experience.

In all job categories the highest per cent of employers indicated that a high school education was the minimum educational level required in hiring a new employee.

Since the majority of present employees in all job categories of the grain and feed industry were high school graduates, with very little post-high school education, and a majority of the job categories required on-the-job training, it seems reasonable to conclude that more high school vocational programs should be established to train students for the employment needs of the grain and feed industry.

53. SMALLEY, MERRILL D. Competencies in Agricultural Law Needed by Farmers. Thesis, 1968. Library, Iowa State University of Science and Technology, Ames.

Purpose. (1) To determine the agricultural law competencies needed by farmers to be successful in their operations; (2) to determine if there were any significant relationships between the degree of competence needed and possessed and certain factors such as age, farming status, educational attainment, years of vocational agriculture, and number of law experiences.

Method. Two groups were sampled in this study. A total of 253 farmers were randomly chosen from 25 counties in Iowa, five from each of the five agricultural economic areas of the state. There were 215 farmers from throughout the state chosen from lists of operators who had been recognized as outstanding farmers during the period 1964-67 by various organizations in Iowa. The designations were outstanding young farmers, master farmers, master swine producers, master lamb producers, and master corn and soybean growers. Identical questionnaires requesting general information about each respondent and asking him to rate 44 agricultural law competencies as to degree needed and possessed on a one to five point scale were sent to each farmer. Overall needed and possessed mean scores were computed for each competency for both groups of respondents. Product-moment correlations were used to determine significant relationships between control variables and selected agricultural law competence areas.

Findings. All competence areas were rated higher for degree needed than degree possessed. Only one area of agricultural law was rated as very little competence needed by either group, whereas all others were ranked as some or much competence needed. Four of the six most needed degree of competence areas selected by each group were the same. They were competence in record keeping sufficient to comply with income tax laws; the legal effect of signing a written contract; legal requirements of an effective will; and the significance of an abstract of title, a deed, and an attorney's title opinion in land purchase. The product-moment correlations revealed three control factors and degree needed coefficients significant at the type of coverage provided by an insurance policy, age of operator and understanding of the legal effects of a written lease, and age of operator and understanding of the effect of taxes on the organization of a farm business.

54. SMITH, ROY. A Study to Determine the Need for Multiple-Teacher Departments of Vocational Agriculture in Nebraska. Thesis, M.S., 1968. Library, The University of Nebraska, Lincoln.

Purpose. The problem of this study was to determine the need for more multiple-teacher departments of vocational agriculture in Nebraska. This problem was divided into two objectives:

1. To determine the characteristics of single-teacher departments which differ from those of multiple-teacher departments.

2. To study the departments of vocational agriculture in Nebraska and determine those which belong more closely to the population of multiple-teacher departments than to the population of single-teacher departments.

Method. A random sample of single-teacher departments and a random sample of multiple-teacher departments was drawn from six states. Data gathered were analyzed statistically to estimate population parameters for the population of single-teacher departments and the population of multiple-teacher departments.

A "Z" test was run on each item in the study to determine whether the differences between the two populations were significant. Those items which showed a significant difference were used for comparison with the Nebraska data to determine the need for multiple-teacher departments in Nebraska.

Findings. Twenty-four Nebraska high schools were found to have significant differences on one or more of the variables studied.

Enrollment in Day-School Programs: Three schools in Nebraska were found to have day-school enrollments in vocational agriculture of 74 or greater, the upper confidence level established in the study.

Enrollment in Off-Farm Occupations Classes: There were no departments in Nebraska which exceeded the upper limit of 14 or more enrolled in off-farm agricultural occupations classes.

Enrollment in Adult Programs: There were no Nebraska departments which had enrollments of 58 or more in adult programs.

Enrollment in Young Farmers Programs: More Nebraska departments, thirteen, exceeded the 95 per cent confidence limit for this factor than for any other.

Membership in Local FFA Chapters: There were seven FFA chapters in Nebraska with memberships over the upper confidence limit of 72.48.

Placement for Agricultural Experience: There were six schools which exceeded the upper limit for single-teacher departments in the number of students in placement for farm experience or supervised off-farm occupational experience.

Students Exhibiting at Fairs: Four schools had 44 or more students exhibiting at fairs.

Total Enrollment: There were no schools in Nebraska with total enrollment in all phases of the program of 127 or more.

From the data reported and analyzed, the conclusions may be drawn that there are differences between multiple-teacher departments of vocational agriculture and single-teacher departments of vocational agriculture, and that there are departments in Nebraska which in some ways fit into the population of multiple-teacher departments better than they do in the population of single-teacher departments.

It must also be remembered that because a school does not appear in this study as exceeding one or more of the upper confidence limits established does not rule out the possibility of its using a second teacher effectively. No attempt was made to combine factors in order to measure total teacher load. It is possible that a local agriculture program which was above the mean but below the 95 per cent upper limit in all phases of the program might have a teacher who works as hard as in a local program which was extremely high in one or two areas and low in others. This is where a study of local conditions would point up the real need.

No attempt was made in this study to determine the possible use of an additional part-time teacher who would spend part of his time teaching in other fields. This would be one way of getting a second man started in a program which was marginal for the hiring of a second man.

55. SORETIRE, ELIJAH O. History of Vocational Education in Agriculture in Iowa. Thesis, M.S., 1968. Library, Iowa State University, Ames.

Purpose. The purpose of this study was to collect, evaluate and synthesize information relative to the development of vocational agriculture in Iowa.

Method. The approach used in the study was to collect information from the following sources: (1) annual reports from the United States Office of Education, (2) records of the State Department of Public Instruction, (3) books, pamphlets, non-thesis studies, etc. written on the subject of vocational agriculture, (4) discussions with educators and the faculty members in the Department of Education, Iowa State University.

Findings. The high school programs in vocational agriculture started in 1918 with six departments and an enrollment of 78. The young farmers' program, then called part-time program, started in 1920 with an enrollment of 594 participants. The adult evening program was the latest arrival. It started in 1923 with an enrollment of 22 in one center.

At the end of the year, 1932, there were 113 high school departments of which only one had a part-time program; whereas, 87 had adult evening programs. The enrollment for the year included 3,745 high school students, 14 part-time enrollees and 6,221 adult evening program participants.

Starting with 106 vocational agriculture departments in 1933, a peak of 203 for the period was reached in 1942. A decline in number of departments developed in 1943 to the lowest figure of 130 in 1945.

The part-time program began to be referred to as the young farmer program in Iowa during the 1933 to 1949 period. There was improvement in number of young farmer programs in operation over that of previous periods. Then the number of programs began to dwindle and by 1949 there were 29 young farmer programs in existence.

In contrast to the young farmer program, the adult evening program gathered momentum. Starting with 75 programs in 1933, the number rose to 184 in 1942. There was a decline between 1942 and 1945. An increase in number started again in 1946, and by 1949 there were 156 programs operating in Iowa.

There were 3,640 high school students in vocational agriculture in 1933, 7,930 in 1942, and 6,931 in 1949. The young farmer program had an enrollment of 121 in 1933, 1,211 in 1941 and 609 in 1949. The adult evening program had an enrollment of 5,708 in 1933, 11,236 in 1942 and 12,656 in 1949.

Progressive changes were made in classroom instruction and supervised farming programs during the period. Classroom instruction became more closely related to supervised farming programs. The cross-section and integrated plans of course organization became prominent features of the instructional program.

In young farmer and adult evening programs, course planning was done with the suggestion of advisory committee so as to meet the needs of the members.

In 1950, there were 194 high school vocational agriculture departments with a total enrollment of 7,918. By 1966, these rose to 246 departments with enrollment of 10,502. The young farmer programs in operation in 1950 were 37 with enrollment of 787. By 1966, there were 36 departments with enrollment of 660. The adult evening program in Iowa was in a better and more dynamic situation than the young farmer program. Operating with 180 programs and enrollment of 14,497 in 1950, the figures rose to 236 departments with enrollments of 16,904 in 1966.

56. SPENGLER, VERNE C. Agricultural Mechanics Facilities in Minnesota High Schools. Thesis, M.A., 1968. Library, Institute of Agriculture, University of Minnesota, St. Paul.

Purpose. To determine the facilities, tools and equipment available for agricultural mechanics in Minnesota High Schools and to determine the relationship between present facilities and the financial ability and financial effort exerted by the local school districts.

Method. A survey instrument was mailed to all vocational agriculture departments in the state. A total of 228 schools or 81 per cent of the vocational agriculture departments in Minnesota were used in the study. Financial data for each school were obtained from records in the State Department of Education. Data were entered on code sheets and processed by computer at the St. Paul Campus, Computer Center.

Findings. Twenty schools in this study did not have shops. Of the 208 schools with shops 108 or 52 per cent were shared with industrial arts or other school uses. Free floor space in the shop averaged 1761 square feet or 109 square feet per student in the largest class. U. S. Office of Education recommendations call for 150 square feet of free floor space per student. Less than 15 per cent of the schools met this requirement.

The financial ability or effort exerted by a school district did not influence free floor space in the shop, teacher tenure, enrollment, number of agriculture teachers or number of tools owned. The number of college credits earned by the instructor in agricultural mechanics had an affect upon the degree to which the shop was equipped. When instructors had 0 - 14 college credits 14 per cent of the shops were well equipped. As quarter hours increased to 15 - 20, 33 per cent were well equipped and where instructors had over 20 quarter hours 52 per cent of the schools were well equipped.

Variations in facilities among the eight vocational agriculture regions were noted. Regions five and two had the most schools with large shops. Region eight had the most schools without a shop. Many of the shops in Minnesota are relatively new with 20 per cent being one to five years of age, 41 per cent 6 to 10 years of age and only 8 per cent over 15 years of age.

57. STENZEL, SAMUEL. The Leadership Role of the Vocational Agriculture Teacher: A Study of His Participation and Responsibilities in Professional and Community Organizations. Master's Report, 1968. Library, Kansas State University, Manhattan.

Purpose. The purpose of the study was to survey the relationship between the leadership roles of the vocational agriculture teachers as advisors to the local Future Farmer of America chapters and their leadership roles as members in selected professional, civic, rural, and church organizations.

Method. The Kansas teachers of vocational agriculture were divided into three groups, according to their participation and rank in the Kansas Better Chapter contest for the years 1965-67. Group "A" consisted of the 21 vocational agriculture teachers whose Future Farmers of America chapters had been awarded the Gold Emblem. Group "B" was composed of the 57 Future Farmers of America chapter teachers whose chapters had been awarded the Standard or Superior rating. Those 62 Kansas vocational agriculture teachers whose chapters had not entered the Better Chapter contest were placed into group "C". A survey form was mailed to a selected sample of 78 per cent of the vocational agriculture teachers in Kansas with an instruction letter. A second letter and survey form were mailed two weeks later to all persons not responding to the original mailing. Ninety-seven per cent responded to the two mailings. The participants were asked to identify their membership, leadership responsibilities, and their attendance of conventions in eighteen professional, civic, rural, and church organizations.

Findings. The data was summarized and presented in tabular form. Each table corresponded to one of the six areas of leadership responsibility - organizational membership, constitutional offices, committee membership, committee chairman, convention attendance, and service as official delegates to conventions. Both the numbers and percentages of participation were recorded. The information was tabulated for each group and for the State of Kansas. To formulate the relationship between the leadership responsibility roles of the three groups, the data were placed into bar graphs to indicate the degree of participation by each group. Each group was placed on each of the six graphs according to their leadership role in each organization. All three groups of Kansas vocational agriculture teachers reported membership in the selected organizations. The membership mean in professional organizations for the combined groups was 97.1 per cent. It was 22.27 per cent in rural organizations, 18.7 per cent in civic organizations, and 82.1 per cent in church organizations. Group "A" reported the highest mean percentage of membership in rural, civic, and church organizations. Group "C" reported the highest mean membership percentage in professional organizations. The groups indicated teachers of vocational agriculture had assumed responsible roles of leadership in the organizations. The findings indicated the vocational agriculture teachers in group "A" had the highest mean percentage in both membership and leadership responsibilities for all the organizations in the survey. Their membership mean percentage was 55.1, group "B" had 52.6 per cent and group "C" had 53.4 per cent. The mean percentage of group "A" in their role in leadership responsibilities in all organizations was 13.0, group "B" was 8.2 per cent and group "C" was 7.1 per cent.

58. STORMER, DONALD L. Vocational Maturity: Description, Specification, and Correlates in Ninth Grade Youth. Dissertation, Ed.D., 1967. Library, Michigan State University, East Lansing.

Purpose. Educators planning vocational experiences need a method of assessing the degree of vocational development. Knowing the level of an individual's or a group's progress toward vocational maturity would enable educators to program more appropriate vocational experiences.

The specific objectives of the study were to: 1. describe three ninth grade groups using descriptive variables found or thought to be related to vocational maturity, 2. assess the vocational maturity of these students according to a specific vocational development theory, 3. ascertain the relationship of the selected variables to the vocational maturity of the students.

Method. The respondents were 243 boys and girls in the ninth grade classes at L'Anse, Crystal Falls, and Onaway, Michigan.

An instrument was developed to measure the vocationsl behaviors suggested in the literature as being indicative of the vocational developmental task of crystallizing an occupational preference. The total score for all vocational behaviors measured was the score for vocational maturity.

The descriptive variables were correlated with the vocational behaviors and vocational maturity variables in a search for relationships. A Pearson Product Moment Correlation at or beyond the .05 level of significance constituted a relationship.

Several standard and special instruments were used to measure the following variables: 1. Age; 2. Aptitudes-verbal reasoning, numerical ability, scholastic aptitude, abstract reasoning, clerical speed and accuracy, mechanical reasoning, space relations, spelling-language, and grammar language; 3. Index of family socio-economic status; 4. Index of socio-economic status of job preferred by students; 5. Interests-outdoor, mechanical, computational, scientific, persuasive, artistic, literary, musical, social science, and clerical; 6. Occupational expectation and aspiration; 7. Place of residence; 8. School achievement; 9. Sex; 10. Social participation; 11. Vocational behaviors; 12. Vocational maturity; 13. Vocational values-altruism, control, job freedom, money, prestige, security, and self realization.

Findings. The description of the three ninth grade groups accounted for a large number of findings.

The following variables tended to be positively related to vocational maturity: 1. Occupational aspiration, 2. Index of socio-economic status of the jobs preferred by students, 3. Participation in social activities, 4. Scientific interests, 5. Verbal, Abstract, Scholastic, and Language aptitudes, 6. Self-realization as a vocational value. The correlations were significant but low and of no predictive value.

The following variables tended to be unrelated to vocational maturity: 1. Rural, rural non-farm or village residence, 2. Family socio-economic status as judged by the occupation of the head of the household.

The vocational developmental task of crystallizing an occupational preference appears to be largely a cognitive process consisting of verbal behaviors.

The vocational behavior, "awareness of factors to consider in formulating an occupational preference", appears to develop earlier than the other vocational behaviors studied. There appears to be a chronological order to development of the vocational behaviors studied.

Girls tended to aspire and to expect higher levels of occupational prestige than boys. However, girls tended to be more occupationally unrealistic than boys.

Youth, at the ninth grade level, preferred occupations of higher socio-economic status than those achieved by their fathers.

Ninth grade youth, of the type studied, hold the vocational values of self-realization and security high as compared to the values of money, control, prestige, job freedom and altruism.

59. STROUSE, JOHN PAUL. A Comparative Study of the Level of Morale of Vocational Agriculture Teachers in Four Midwestern States. Ph. D. Thesis, 1968. Library, Purdue University, Lafayette, Indiana.

Purpose. The purpose of this study was to compare the level of morale of vocational agriculture teachers in Illinois, Indiana, Kentucky, and Ohio. The morale data for the sample of teachers were analyzed with respect to selected situational, personal and pre-service or in-service variables.

Method. Morale was measured by The Purdue Teacher Opinionaire. The PTO yields a total morale score and scores on ten morale factors which are: Teacher Rapport with Principal, Satisfaction with Teaching, Rapport Among Teachers, Teacher Salary, Teacher Load, Curriculum Issues, Teacher Status, Community Support of Education, School Facilities and Services, and Community Pressures.

One hundred vocational agriculture teachers were randomly sampled from Illinois, Indiana, Kentucky, and Ohio. Approximately seventy-four percent (295) of the sample of 400 teachers completed and returned the data collecting materials.

The data were analyzed by: (1) single factor analysis of variance, (2) Newman-Keuls test for significant pairs, and (3) Pearson product-moment correlation.

Findings. The following results were obtained from the analyses:

1. Morale differences by state were most pronounced on the teacher load factor. Significant differences also occurred among the states on the teacher status and community support of education factors.

2. Morale data analyzed with respect to the situational variables - number of high school students in department, number of post-high school persons served, number of licensed teachers

in department, and predominant type of agriculture in school area - revealed significant differences in only five instances. Three of these differences were on the teacher load factor. Teachers in mutiple teacher department reacted most favorably to teacher load items.

3. Morale data analyzed with respect to personal variables yielded the following:

   a. Age - Three significant differences occurred among the morale factors, but no consistent pattern was evident in the different age categories.

   b. Amount of academic training - Teachers holding only the Bachelor's degree reacted significantly lower on teacher load items than teachers with more training.

   c. Teaching experience - Generally speaking, teachers with the most teaching experience had higher morale. Significant differences were noted on total morale mean scores only on the total experience and tenure variables.

   d. Tenure - Tenure teachers scored higher on all morale total and factor mean scores except teacher salary.

4. Little relationship was found between morale as measured by the PTO and perceived importance and adequacy of pre-service training in seven technical agricultural areas, two professional education areas, and the social-behavioral science area.

5. Differences among teachers by state on importance and adequacy of pre-service training were most significant for professional education courses.

6. Differences among teachers by state on the extent that ten selected in-service activities contribute to their competence, success, and satisfaction produced seven significant differences.

7. A positive relationship was noted between morale and the extent that selected in-service activities performed by state supervisory personnel contribute to the competence, success, and satisfaction of vocational agriculture teachers. Thirty-three correlations between morale factor and total mean scores and ten activity extent mean scores were significantly greater than zero. Scores on five of the in-service activities - promoting agriculture education to administrators, assisting in FFA activities, providing for in-service training, promoting a desirable relationship with agricultural and other agencies, and evaluating facilities and equipment - showed a positive relationship with the morale total mean score.

60. SWOBODA, DONALD W. The 4-H TV Action Series: A Study of the Response of Urban Children to Emergency Preparedness Information Via ETV. Thesis, M.S., 1968. Library, The University of Nebraska, Lincoln.

Purpose. This study was to evaluate the 4-H TV Action series (ETV series) as a method of presenting emergency preparedness material as 4-H project material to urban elementary students.

Method. Three elementary schools, in Lincoln, Nebraska, were selected; and 481 fourth, fifth, and sixth grade students were tested to determine the impact that the variables of socio-economic area of residence, grade, method of pre-program information given by teacher, intelligence, sex, and previous 4-H work had on the dependent variables of "knowledge gained" from watching the ETV series and "participation" in the series.

Findings. Little meaningful significance was found as to any gain in knowledge of subject matter by participants over non-participants relative to the six variables examined. Participation as to socio-economic areas high, middle, and low, were respectively 18.7, 14.7, and 8.1 per cent. The low differed significantly at the .05 level of confidence from the high area. Fourth graders participated significantly higher than either the fifth or sixth grades at .05 and .02 levels of confidence. Students with the greater amount of teacher information on the programs participated significantly less than the group with limited teacher information presented. The variables of intelligence, sex, and previous membership in 4-H clubs produced no significant differences as to partipation in the TV Action series.

61. THOMPSON, LESLIE. Nebraska Economic Area Related to Occupational Factors of Nebraska Farm Male High School Graduates. Thesis, M.S., 1967. Library, The University of Nebraska, Lincoln.

Purpose. To analyze, on a state-wide basis, the relationship of Nebraska's seven economic areas to factors associated with the occupations of Nebraska male farm high school graduates who were graduated from high school nine to thirteen years earlier.

Method. Lists of all Nebraska high schools which had offered approved programs of vocational agriculture during at least one of the academic years 1954 through 1958 were developed grouped according to size of high school. Size was based on high school boy enrollment. A proportionate sample of 50 per cent or 69 of these schools was randomly selected. A list of 3,192 farm reared males who graduated between 1954 and 1958 obtained from the 69 schools, and a 40 per cent sample was randomly selected. Questionnaires were received from 1,120 graduates, or 92.9 per cent.

Findings. (1) The highest percentage of graduates engaged in farming originated from Area 2, the lowest from Area 3a and Area 7; (2) the highest per cent of graduates in professional and technical occupations originated from Area 7, the lowest per cent from Area 4; (3) graduates from Area 4 and Area 5 migrated less extensively from their home communities, the highest per cent migrating from Area 1; (4) the highest per cent of graduates receiving $9,000 or more originated from Area 4, the lowest from Area 2; (5) forty-one per cent of the graduates had only positions agricultural in nature, whereas 34.2 per cent had held positions not related to agriculture; (6) graduates originating from western Nebraska economic areas (1, 2, 3a, and 3b) had a higher percentage of fathers who were owners and owner-renters; (7) graduates from economic areas located in eastern Nebraska (areas 4, 5, 6, and 7) expressed a higher value of vocational agriculture as related to their present occupation; (8) more graduates from Area 2 tended to enroll in post-high school institutions; (9) chance rather than planning had led the largest percentage of graduates (32.8 per cent) to their present occupation; (10) graduates who expressed the highest degree of job satisfaction in their present employment originated from Area 2.

62. VALLAGER, EMIL. An Evaluation of the Relative Importance Assigned to Selected Abilities by Employers in Nonfarm Agricultural Occupations in the Wahpeton, North Dakota Area. M.S. Research Paper, 1967. Department of Agricultural Education, North Dakota State University, Fargo.

Purpose. To determine the relative importance assigned to selected abilities by employers in nonfarm occupations of an agricultural nature.

Method. Using the classified section of the telephone directory as a guide twenty-five employees in nonfarm agricultural occupations were selected. In an interview and by use of a questionnaire employees were asked to evaluate the relative importance of major abilities included in the teaching program in vocational agriculture of the Wahpeton High School as per the following areas:

1. Leadership
2. Agricultural business
3. Agricultural mechanics
4. Crops--science, production and management
5. Horticulture
6. Livestock--science, production and management

Findings. The leadership abilities included in this study were rated highest in importance of any six areas included in the study. An average weighted score of 51.83 of a possible 75.00 was calculated from data received.

Agricultural business abilities rated nearly as high as leadership abilities with an average weighted value of 51.25. All of the abilities listed received a relatively high degree of importance of usefulness. The lowest score in this area was assigned to the ability to read legal land descriptions. This ability had a value less than half that of the top ability--to meet and wait on customers.

The third group of abilities, agricultural mechanics, had a weighted average value of 23.

The ability to read and follow the operator's manual had a weighted value of 45--almost double the average--which indicated the high importance placed on this ability.

Other abilities in this area have been discussed in detail earlier in the report.

Crops, horticulture, and livestock abilities received weighted values of 19.69, 14.50, and 12.60, respectively. These abilities had a much lower importance rating by agribusiness employers than did leadership and agricultural business abilities.

63. WARD, TED. Size of High School Related to Occupational Factors of Nebraska Male Farm High School Graduates. Thesis, M.S., 1967. Library, The University of Nebraska, Lincoln.

Purpose. To analyze on a state-wide basis, the relationship of size of high school to factors associated with the occupations of Nebraska male farm high school graduates who were graduated from high school nine to thirteen years earlier.

Method. Lists of all Nebraska high schools which had offered approved programs of vocational agriculture during at least one of the academic years 1954 through 1958 were developed grouped according to size of high school. Size was based on high school boy enrollment. A proportionate sample of 50 per cent or 69 of these schools was randomly selected. A list of 3,192 farm reared males who graduated between 1954 and 1958 obtained from the 69 schools, and a 40 per cent sample was randomly selected. Questionnaires were received from 1,120 graduates, or 92.9 per cent.

Findings. (1) The highest percentage (40.5 per cent) of graduates who entered farming had attended class A schools, while the lowest per cent (34.1)per cent had attended class C schools; (2) the highest per cent of graduates who entered professional and technical occupations attended class C high schools; (3) more of the graduates from class C and D schools entered nonagricultural occupations than graduates from class A and B schools; (4) a higher percentage of graduates from smaller high schools had supplemented their income; (5) a higher percentage of fathers of graduates who attended class C and D high schools were farm owners and owner-renters; (6) graduates from smaller high schools had enrolled in more semesters of science and mathematics; (7) graduates from the larger high schools had enrolled in more semesters of vocational agriculture than graduates attending smaller high schools; (8) a higher percentage of class B and D high school graduates had enrolled in post-high school insitutions; (9) a higher percentage of class C high school graduates who enrolled in post-high school institutions had received bachelors degrees or above than graduates from other high schools studied, (a) graduates from smaller high schools had been employed for longer periods of time in their positions than for other schools studied; (10) graduates from larger schools had held more positions since graduation than had graduates who had attended smaller high schools.

64. WILLIAMS, RAIFORD. Development of a Curriculum in Agricultural Chemical Technology for the Wharton County Junior College, Wharton, Texas. Thesis, D.Ed., 1968. Library, The University of Missouri, Columbia.

Purpose. (1) To determine the number of skilled employees needed, the positions for which agricultural competencies were required, products sold and services available to customers, items of machinery and equipment that employees used, the positions for which there was a need for supervised cooperative activities, and the importance of competencies to employees of businesses which sold agricultural chemicals in the Wharton, Texas area, and (2) to develop a suggested course of study in agricultural chemical technology.

Method. A survey instrument was developed and field tested. It consisted of two parts. In Part I employers were requested to provide descriptive information about their businesses. Part II required employers of agricultural chemical businesses to rate the importance of 102 agricultural competencies for their employees Forty-one businesses were included in the survey conducted in November, 1967. The competency ratings were factor analyzed to facilitate the development of a course of study.

Findings. Two hundred and twenty-eight skilled employees were employed in 20 positions in 41 agricultural chemical businesses in the Wharton County Junior College area. One hundred and twenty new and replacement workers (skilled) will be needed during the five-year period following the survey. Products sold by more than 25 per cent of the businesses were fertilizer, agricultural chemicals, seed, lawn and garden supplies, veterinary supplies, feed, hardware, farm equipment, and petroleum products. Customer services available in more than 30 per cent of the businesses were (1) taking soil sample, (2) servicing fertilizer applicators, (3) making insect count, (4) testing grain for moisture, (5) apply fertilizer, (6) storing and drying grain, (7) servicing chemical equipment, (8) servicing seeding equipment, (9) mixing feed for bulk sales, and (10) blending fertilizer for bulk sales. Machinery and equipment used by employees included an assortment of office equipment; equipment for storing, transporting and applying fertilizer and agricultural chemicals; hand and power tools; grain storing and drying equipment; and feed grinding and mixing equipment.

A two-year curriculum was suggested. It included twelve weeks of supervised cooperative occupational experience in the summer following the first year of training. The curriculum included the following specialized courses: first year--animal production and nutrition, agricultural mechanics, salesmanship, agricultural mathematics, and business management; second year--entomology and agricultural chemicals, soil, farm management, fertilizer, crop production, communications, and human relations. Facilities needed include a merchandising laboratory and an agricultural mechanics laboratory.

65. WOODIN, RALPH J. Supply and Demand for Teachers of Vocational Agriculture in the United States for the 1967-68 School Year. Staff Study, 1968. Ohio State University, Columbus.

Purpose. The major purpose was to determine the number of teaching positions in vocational agriculture in high schools in the United States, and the number of graduates of agricultural education programs qualified to fill such positions. In addition, the study attempted to determine the number of teachers required by the year 1970 as well as the types of positions which teachers might expect to enter in the future.

Method. Each State Supervisor of Vocational Agriculture was sent a questionnaire regarding teaching positions in his state in August 1 of 1967. Chairmen of all teacher education departments preparing teachers of vocational agriculture were asked to indicate the number of graduates and the positions which they had assumed by August 1, 1966. Data were assembled showing the number of teaching positions, the extent of the shortage of teachers, the types of teaching positions and the number of positions by states. The occupations of the 1967 graduates in agricultural education was shown, as well as the supply of these from each state.

Findings. A total of 10,221 positions in teaching vocational agriculture were reported and 1,104 replacements were required during the school year. 232 teachers were needed, but not available in August of 1967. There were also 242 teachers with temporary or emergency teaching certificates. Added together, this represents a shortage of nearly 40 per cent of the total number of replacements.

Only 60 per cent of the qualified graduates in agricultural education entered teaching. Other occupations which they entered included graduate work, the armed forces, teaching other subjects farm sales service or supply, farming and other work.

The widespread shortage of teachers was indicated by the fact that only ten states indicated that they had enough teachers. Supervisors estimated that by 1970 the number of teachers of vocational agriculture would increase from the current level of 10,221 to 11,246, which will make the teacher shortage even more severe.

Of 10,221 teachers reported, about 75 per cent were in single teacher departments. 70 per cent taught both Adult and Young farmer classes as well as high school classes in agriculture. Only 8 per cent of the teachers were reported to be teaching in programs full time other than production agriculture.

66. WOODIN, RALPH J. The Use of Filing Systems by Teachers of Vocational Agriculture in the United States. Staff Study, 1968. Ohio State University, Columbus.

Purpose. The major purpose of the study was to determine the use of filing systems by teachers of vocational agriculture and particularly the use of the Agdex filing system, which represented a new development in filing of agricultural publications and which had been in use for 9 years. More specifically, the study was undertaken to identify those states using the Agdex system, the number of teachers using some recommended system, the length of time it had been used by states, and the general satisfaction of those who had used it.

Method. Each state supervisor of vocational agriculture was sent a questionnaire regarding filing systems in his state. On August 15 of 1968, responses were received from 46 states. The replies were tabulated and presented in the study.

Findings. In 22 states no particular filing system was recommended, while 24 states recommended a uniform filing system to all teachers. Of the 24 states which recommended filing systems, 16 recommended the Agdex system which is 34 per cent of the total. Over 9 states were precoding materials before sending it to teachers. Most filing systems had not been revised for 6 years and a majority of supervisors believed that a filing system now in use needed further improvement.

It was concluded that the greatest advantage of the Agdex system would be in uniform precoding of bulletins and pamphlets sent to teachers of vocational agriculture across state lines. It was also concluded that enough states were using the Agdex system to make it desirable to start precoding materials sent to teachers.

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